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Pulp and Paper Magazine
OF CANADA

A Weekly Magazine Devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades

VOL. XXI. GARDENVALE, QUE., JULY 5th., 1923 No. 27

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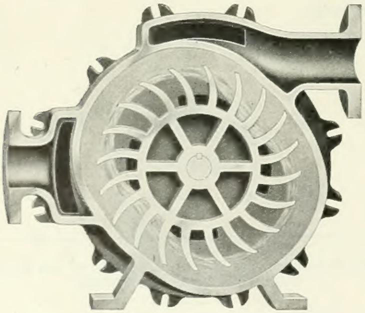

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:-: EDITORIAL :-:

ASSOCIATION SERVICE TO THE RESCUE

Announcement has just been made that the Federal Trade Commission of the United States has discontinued from July 1st the collection and distribution of data regarding the production, shipment and consumption of paper and pulp. The service which was rendered by the Federal Trade Commission to the Pulp and Paper Industry has been most varied and valuable. The Commission received monthly reports from producers of paper and of pulp and issued monthly reports which kept both the producers of paper and the consumers of it well informed as to the stock on hand and the rate of production as well as the causes for shut-downs during the past preceding period. This information gave a very good summary of the general state of the industry. A summary was also given of average prices for newsprint, as based on general contracts.

It is unfortunate that the Federal Trade Commission finds itself obliged to discontinue this valuable service, but it is fortunate that there are other organizations which are in a position, if properly supported, to carry on this work. It is hardly conceivable, after the five or six years of dissemination of accurate trade statistics by this Government department, that the industry should lapse back into a period of comparative ignorance as to what is the actual state of affairs in connection with the manufacture and consumption of paper and pulp. At this juncture the Trade Association and notably the Newsprint Service Bureau in the United States, and the Canadian Pulp & Paper Association in Canada, stands ready to serve the manufacturers of newsprint paper and mechanical and unbleached sulphite pulp by providing them with accurate and prompt statistical data on the conditions of the industry in proportion to the co-operation they get from the manufacturers themselves. Practically every manufacturer of newsprint and presumably of other grades of paper and of pulp as well, has been reporting with fair promptness to the Federal Trade Commission or to one of these other organizations that we have mentioned as to their activities and have, in return, been provided with an accurate chart of the course of events in their industry. To some extent, the activities of the Federal Trade Commission have duplicated the activities of the Pulp and Paper organization, and to the extent of that duplication, the manufacturers will be relieved of a certain amount of clerical work. It would certainly appear correct to assume that so long as the companies have been able to provide the Federal Trade Commission with the necessary statistics for the last five years, it would not be unreasonable to expect them to continue the collection of this data and the filling out of the few necessary forms for the information of the secretary of the organizations which would continue the work that has been carried on by the Commission. As a matter of fact, it would be distinctly to the advantage of the whole industry if the scope of the reports of the Commission could be extended along a few lines, particuarly as to the extent of imports of foreign products and production of papers not regularly made. We realize well enough that there is keen competition between the domestic producers and the importers of the foreign article, but this competition might just as well be intelligent and correctly advised as to have both sides blindly knocking at the other. It would be a whole lot better to have open and above board reports of conditions rather than to revert to the old-time, under handed, backdoor system of getting information about competitors' business. We trust that those days are passed and gone forever, and that the period of open friendly competition with co-operation in action with regard to common problems and difficulties that has been so auspiciously started will continue with even greater success than the notable improvements that have taken place in business conditions within the last four or five years.

SHORT MEMORIES

With the welcome relief that has come recently with rain and a consequent temporary diminishing of immediate danger from extensive forest fires, we are likely to forget the suffering and need of those who were involved in the fires that were so extensive in Quebec Province early this summer. It will be recalled that several towns were completely wiped out, and a considerable number of settlers lost their entire property. Those who went through the experience of the forest fire are not likely to forget it very soon. There are also some others who do not forget these things as is shown by the following letter received shortly after the fire by Mr. G. C. Piché, chief of Forest Service for the Province of Quebec:

Dear Mr. Piché,

Having read the appeal made to the Government at Ottawa by some of the Quebec members for assistance for the six hundred or more families rendered homeless by the recent forest fires, and knowing something of the nature of the misfortune suffered by these now destitute people, who have lost their all and are probably on the verge of starvation, I beg to enclose herewith my cheque for One Thousand Dollars, in the hope that it may serve as the nucleus of a fund sufficiently large to meet the most pressing of their necessities. I am quite sure there are at least thirty firms or individuals in the province of Quebec who will duplicate this subscription if a proper appeal is made to them through the medium of the public press.

I am sending my subscription direct to you because of the urgency of the situation and because I understand you are in touch with the sufferers and are in a position to apply it to their immediate relief.

Yours very truly,
(Signed) FRANK J. D. BARNJUM.

No doubt there was quite a general response to the appeal for assistance in behalf of the sufferers from this forest fire. It is very gratifying to know that we have in Quebec public spirited citizens who are ready to assist with immediate relief on occasions of this kind, but it would seem that some sort of punishment should be visited upon the Government and upon the people of the province for permitting conditions to exist that not only make possible but foster such misfortunes as inevitably accompany these unnecessary and disastrous forest fires that are constantly recurring in our province as well as throughout this Dominion of Canada. Both New Brunswick and Quebec have recently taken very stringent measures in keeping ordinary travelers and sportsmen out of the woods unless they have sufficient right to be there to warrant their being given a license by the Forest Service, but measures must be taken that will be a good deal more drastic than this before the thirty or forty thousand people engaged in the pulp and paper industry, and many more who are engaged in transporting and converting the products of the mills, will be assured of work in future years. It is absolutely ridiculous to shut our eyes to the mathematical fact that continual substraction from a certain quantity will eventually leave no remainder.

COBWEBS

We have received from Mr. J. L. McNichol samples of the first three runs of paper made on the Siamese experimental paper machine which was recently put into operation. The first run consists of a nice sheet of book paper containing 80 per cent waste paper, 15 per cent cotton rags, and 5 per cent. China clay. The second run was an antique laid book of high quality and the third run a wrapping paper made of all khaki rags. Our congratulations to Mr. McNichol and his crew of Siamese paper makers.

We have just received from the Wayagamack Pulp & Paper Co., a folder containing samples of their pure sulphite wrapping papers. These are shown in six colors, and with both wide and narrow stripes. The paper is machine glazed and appears very well adapted for drug and small ware wrappings, and for the manufacture of confectionery bags, notion envelopes and waxed papers. It is interesting to see the largest producer of kraft wrapping paper in Canada turning out a sulphite sheet, but apparently they can make one just as successfully as the other.

The editor has just received, through the courtesy of a reader of the Pulp & Paper Magazine a copy of the "Honolulu Star-Bulletin" for June 9th. This apparently is the regular Saturday edition and contains 32 pages. It will be seen that the large consumption of newsprint paper is not confined to this continent.

A novel bit of advertizing service is furnished by Canada Paper Co. This is a group of sample covers of standard sizes, cut from the various shades of "Radiant" cover, the new cover paper put out by the company. Each sheet shows how many covers and inside pages can be cut from standard cover paper sizes and standard book paper sizes without waste. The outside of the folder is blue Fibrestock, and inside are the six colors of Radiant Cover. There is much helpful information and suggestion in the whole.

In order to give the recent convention of the Paper Box Manufacturers' Association the attention it deserves, the next issue of the *Pulp and Paper Magazine* will be a "Paper Box Number", with the complete proceedings of the annual meeting held at Niagara Falls, June 25 and 26.

WHAT DO WE BURN WHEN WE BURN OUR TREES?

What do we burn when we burn our trees?
We burn the home for you and me,
We burn the carriage-house, barn, and shed,
The baby's cradle, the little boy's sled,
The bookcase, the table, the rocker of ease,
We burn all these when we burn our trees.
What do we burn when we burn our trees?
The daily comfort which everyone sees,
The wages of men for years to come.
In factories big where busy wheels hum—
For industries many depend on trees—
When our forests burn, we burn all these.
What do we burn when we burn our trees?
The homes of birds, and squirrels, and bees,
The homes of the brook, and the cooling spring
Where violets blossom, and bluebirds sing,
The beauties of nature, so fair to please—
We burn all these when we burn our trees.
Summer or Winter, day or night,
The woods are an ever-new delight;
They give us peace, and they make us strong,
Such wonderful balms to them belong.

—Stoddard.

Heat Recovery From Machine Room Vapor[1]

By J. O ROSS, President Ross Engineering of Canada, Limited

I am glad that this paper is to cover one subject only. The Briner economizer has been discussed to some extent in the past, but usually as a side issue in the ventilation of the machine room. In this paper we will discuss this one subject and make the others incidental.

We must first have a clear understanding of the reason for and principle of ventilating the machine room. The machine room should really be considered as part of the paper making machine. It is the enclosing shell around the moving parts of the machine. The design and construction of it should really be carried out in the same way that any other part of a machine would be considered. The ventilation of the room is really part of the process of making paper. It should be done properly and in an ample manner in order that it may not impede the operation of producing paper and yet it should be done as economically as possible in order that no excessive cost will be added to the cost of production.

When a sheet of paper is formed it is very wet and it must have this moisture removed. Part of this water is removed at the wet end of the machine which is really a part of the drying equipment. This is rather a new way of looking at it but is becoming well recognized and much study and effort are being made to have the wet end remove as much water as possible. However much may be accomplished in this end there is a large volume of water which must be removed on the dryers. This amount of water may be equal to nearly three times the weight of paper produced as on some news machines, or may be one and one-half times as much, as is usual on boxboard, or about as much water as pulp on some pulp machines.

This water is evaporated from the sheet when passing over the steam heated dryers and as it is water vapor it must be removed from the machine room to avoid condensing on the ceiling. In order to carry away this vapor, a certain amount of air must be allowed to pass out with it. This is absolutely essential and basic if the paper is to be dried. The amount of air that must pass through the machine room is dependent on three things.

The first is the amount of water that is to be carried out. This includes the water evaporated from the sheet, plus the water dried out of the broke, plus the water rising from the wet end of the machine. These quantities must be ascertained as closely as possible as we must first know how many pounds of water vapor we have to remove.

The next factor is the temperature at which the mixture of air and vapor will be carried out and the third factor is the percentage of saturation of the mixed vapor and air. These two factors when known will give us the number of pounds of vapor contained in each cubic foot of air. Then it is a simple matter to determine the cubic feet of air per minute that will have to pass through the machine room. The temperature of the air and percentage of moisture contained can be measured on an existing job or must be based on experience. Much depends on the question as to whether there is a hood over the machine, how cold the roof is and how much margin should be provided for avoiding danger of drip.

Assuming, however, that we have arrived at the total volume of air that must be allowed to pass through the machine room. The amount is surprisingly large, but we will touch on that later.

Now bear in mind that every particle of that air must be heated from the temperature outdoors to the temperature in the ventilators. It doesn't matter where the air comes from to the machine room, it is evident it finally must come from outdoors and is heated somewhere in the mill. It may come from a finishing room in which case you are paying for heating it in that room. It may be heated by a fan heater, or by steam pipes on the roof or by the dryers themselves. It doesn't matter where you do it, you are heating it and you are paying for this heat unless it comes from some source which would otherwise be wasted.

We are not discussing in this paper the best method of introducing the air into the room or the various ways used to make this air perform other work besides carrying off the moisture in order to make it partly pay for this heat it has taken. We are only concerned with the fact that a large volume of air must be introduced into the machine room and that it must be heated.

Now let us see how serious a problem this is and whether it is going to take an amount of heat that will be noticed in production costs. Let us not theorize but take some real mill in actual operation. Take a Canadian newsprint mill making on one machine 75 tons of newsprint per day. This mill has two machines in a room but let us take one machine for our figures. The paper entered the dryer section 70 per cent wet and left the dryer section with a moisture content of 5 per cent. This figured 259 pounds water per minute evaporated. The air passing out of the ventilators varied at different points from 112 deg. to 127 deg. and the wet bulb temperature from 96 deg. to 120 deg. This averaged about 20 grains of moisture per cubic foot of air so that about 91,000 cubic feet of air per minute was passing through the room for each machine. When the test was made it was just zero outdoors and the average temperature of the air passing out of the stacks was 120 deg. Therefore this mill was heating for each machine 91,000 cubic feet of air per minute from 0 deg. to 120 deg. and using approximately 183,000 B. t. u. per minute equalling about 183 lbs. of steam per minute or 10,980 lbs. of steam per hour and it was live steam. At a figure of even 50c. per thousand pounds of steam it was costing nearly $5.50 per hour to heat the air. This machine was turning out a little over three tons of paper per hour so that the cost of heating the air in the machine room was $1.80 per ton of paper. Rather a nice profit in itself.

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[1] Paper read at Summer Meeting of the Technical Section, Gardenvale, Que., June 21, 1923.

It is quite evident from this that the amount of steam required for ventilating a machine room is a serious item and is a charge upon the production that it well worth considering. It is quite a percentage of the amount of steam required to dry the paper. For instance on the machine just referred to, the amount of steam required on the paper machine amounted to 364 pounds of steam per minute or 21,840 pounds of steam per hour. The amount required for ventilation was therefore almost exactly 50 per cent. of the steam used on the machine, yet this ventilation system was efficient and many mills are running with far less efficient ventilation systems than this.

As it was stated previously, this heat for ventilation is a direct charge and must be supplied somehow and somewhere. It may be furnished by exhaust steam, which might on the face of it appear to not be a serious charge. It should first be determined, however, that this exhaust steam cannot be used elsewhere and that in modern power plants, especially with bleeder turbines, this exhaust steam is a heavy charge on the power plant. In many paper mills, however, this steam is direct live steam and it is upon that basis that the problem becomes very serious. These figures were given for zero weather but in Canada we get many days from 20 deg. below zero to 40 deg. below zero. When the weather is 20 deg. below zero this steam consumption goes up 16-2/3 per cent. and in 40 deg. below zero weather nearly a third more steam is used than in zero weather. It is just during this extreme weather that the heaviest load comes upon the power plant in any event and to feel that when the boiler plant is at its peak that the ventilating requirements will call for a third more steam, presents a problem that cannot well be figured in dollars and cents. The chief engineer of one big news mill told the writer that any saving in steam during the cold weather period can not be figured on a cold dollars and cents basis because these ventilation steam requirements were the very things that forced their boiler plant to the peak and that was when they had any troubles on the equipment.

Assuming, therefore, as I think we all will, that this heat leaving the dryers must come from somewhere in the mill, we have already stated that this must be steam or it must be a source of waste heat. In some mills there will be buildings where there is an excess of heat which may pass from that room into the machine room and perhaps can be considered as not costing anything. This is sometimes true in engine rooms. In most mills, however, there is no source of this type of waste heat that amounts to very much. The biggest source of waste heat is quite evidently the vapor rising from the machine room roof. It should be remembered that the steam used on the paper machine has been very largely expended in turning the water into vapor. This vapor at a high temperature passes to the atmosphere. If this vapor could be condensed back into water we would recover the latent heat and it is this purpose that the Briner economizer serves.

The Briner economizer is a device consisting of a series of chambers or channels separated by thin metal sheets. The hot vapor from the machine passes through one series of these channels and the cold air supply for the machine room is drawn through the alternating channels. This cold air absorbs the heat transmitted through the metal plates and this heat warms this air up so that it saves the steam required for heating it. If the moist air leaving the machine room had been dry air, it will be quite evident that we would get a proportional rise in temperature of the cold air, that is, if we lowered the temperature of the exhaust air 20 deg., we would increase the temperature of the incoming air 20 deg. This ratio, however, is entirely different on account of the exhaust air being moist. We secure practically 1,000 B. t. u.'s when we condense a pound of the vapor in the exhaust air and it has been found that by cooling the exhaust air only 25 deg., that we will get an increase in temperature of 85 deg. in the cold air entering. This is due to the condensation of the vapor. This condensed vapor runs down the economizer channels and is connected by drip gutters on the bottom which carry it to a main drain pipe. The first one of these installations was put in approximately four years ago and it is interesting to note that this first installation was in a Canadian mill. There are now in operation in Canada, eight of these Briner economizers and in the United States seven. There are quite a number of them being installed this year for use next winter both in Canada and the United States. They have not been in use a sufficient length of time so that we could get extensive practical figures on what they are actually doing, but we have data that are very significant. The rise in temperature secured varies depending considerably on the temperature and humidity of the vapor. I am giving herewith some of the figures as to the rise in temperature secured on different economizers this past winter and you will note what a large percentage of the heating of this air is done by the economizer, which utilizes nothing but waste heat.

> Air entering 6° below zero. Air leaving economizer 82°. Vapor entering economizers or leaving room 108°.
>
> Air entering 14° below zero. Leaving economizer 63°.
>
> Air entering 2° above zero. Air leaving economizer 69°.
>
> Air entering 18° above zero. Leaving economizer 90°.
>
> Air entering 52°. Leaving economizer 100°.
>
> Air entering 12°. Leaving economizer 85°.
>
> Air entering 16°. Leaving economizer 94°.

These varying results are obtained on different mills, but all bear a relation to the vapor and outside temperature on each installation.

Now let us see what this heat saved would mean on the machine in question. Considering their conditions, it was determined that an economizer installation would heat the incoming air on this 75 ton machine from zero to 85°; from 20° above zero to 88°. Now our total rise in temperature from the outside entering air to the air leaving the hood is from zero to 120°. The economizer would heat it from zero to 85° and steam would be required somewhere in the mill to heat it from 85° to 120°. That is, 85° of this rise would be accomplished by the economizer and 35° of this rise by steam. This would mean one would need in zero weather 3,302 lbs. of steam per hour instead of 10,980 lbs. or a saving of 7,678 lbs. of steam per hour on one machine. At 50c per thousand pounds for steam, this is a saving of $3.84 per hour or $92.16 per day during the zero weather.

This mill in question figured that they had 150 days which would average 20°, this figured out a saving of $74.64 per day for 150 days or a total of $11,196. Then they figured that they would have another 100 days when it would average 40° and this would represent a saving of 4,575 lbs of steam per hour and at 50c. is a saving of $2.28 per hour or $54.72 per day and for this period an additional saving of $5,472, or a total saving for the year of $16,668 worth of steam, without considering the other 50 operating days.

As stated before this showing in dollars and cents does not properly show what happens in the extreme winter conditions. The economizer really acts as a balance valve on the weather. The saving due to the use of a Briner economizer increases very rapidly as the outside temperature drops due to the greater difference of the air temperature and the vapor temperature. This can easily be seen when it is stated that on one installation the temperature of the air leaving the economizer at 20° above zero was 90°, at zero it was 88°, at 6° below zero it was 82°, at 20° below zero it was 79°, at 40° below zero it was 75°. In other words, the steam requirement in that mill for ventilating the machine room was only a few percent more when it was 40° outdoors than when it was 20° above outdoors. The economizer installation in the news print mill quoted above, will show a return on the investment of about 70 per cent.

It should be clearly borne in mind that a Briner economizer is exactly the same in its effect as a heater. When putting in a fan system for discharging warm air into a machine room, a steam coil heater is used. Therefore the cost of the fans and distributing ducts should not properly be charged against the economizer installation but should be an entirely separate investment. This makes it possible for mills which now have ventilating equipment to put in economizers in conjunction with this ventilating equipment.

The arrangements of these economizers have to be very carefully considered and in many old mills it will not be found practical to install them without excessive changes in the ventilating equipment or the buildings. On a new mill, however, arrangements can be made when the mill is being built to use economizers and I feel that any new machine room being built in Canada should be so arranged as to ventilating equipment that an economizer could be added even if it should not appear that it may be installed in the beginning.

Just one further explanation of the installation of these economizers. It will be seen that the heat is derived from the vapor passing off the machine. Now if the machine should be shut down a comparatively small amount of vapor will pass out, which would not give as high a temperature of air leaving the economizer as it would with the machine in operation. For this reason a bank of steam coil heaters is installed between the economizer and the fan and in order to make this require as little attention as possible and to insure that this steam is not left on when it is not necessary, a thermostat is used on the steam valves of these coils. When the temperature of the air entering the machine room drops below the required temperature due to shutting down the machine or due to an extreme change in temperature, the thermostat automatically turns on the steam and maintains the desired temperature until the economizer is again heating the air to the desired temperature, in which case the thermostat shuts the valves automatically. Provision is made for recirculating the air from the machine room through these coils on Sundays and during shutdown periods. This prevents heating cold fresh air during these periods when ventilation is not required.

Discussion

In response to questions which have been asked the following might be added.

1. The question of using the air from which the moisture has been extracted. It is very doubtful if this air could be used on any ventilating problem around the mill. It will be understood that this air is not only saturated but usually super-saturated, that is, it carries free moisture along with it. This air has only been cooled down to a temperature of from 80° to 90°, therefore the re-use of this air would mean using air totally saturated at a temperature of 80° to 90°, which would mean that this air would have to be heated very considerably hotter than outside air in order to get the same capacity for absorbing moisture. It is perfectly practical to figure out that there would be a saving in steam if that air was used in some other part of the mill instead of fresh air, but it would mean carrying the air out of the building and maintaining the building at such a high temperature that it would be impossible to have workmen remain in it. It would not be practical to use it in the machine room because it is all practically the same temperature as the air which has been heated and contains from five to fifteen times as much moisture.

2. The question as to the use of the water condensed. This water is at a temperature from 75° to 85°. Some questions were asked as to the use of this for boiler feed make-up but we would hesitate to recommend that in view of the possible injurious effect. There is no reason why it could not be used for shower water or for a box board mill in the beaters. It should be remembered that this amount of water is not a very large item as it does not require a great deal of vapor condensed to give a large amount of heat.

3. As to the size of this equipment, a Standard Briner Economizer is about 8½′ in height over all and about 8½′ in length. The width of the equipment varies with the size of the paper machine and governs the amount of vapor being handled. It may be cut up into several units or put in this one unit. The total width if made in one unit for a 75 ton machine would be about 19′. It is not usual, however, to make them in one unit and the usual size of the units is about 10′ wide. The most suitable metal for the plates is pure wrought iron.

4. The question was brought up as to the variation in the volume of air for Summer and Winter conditions. This is something that has not been given very much consideration in the past but is certainly something that will have to be considered very carefully in the future if we are going to have economical conditions. It will have been seen from this paper that the amount of air passed through the machine room is determined by taking the total grains of moisture carried out of the roof by the vapor and deducting from that the total grains of moisture coming into the room with the incoming air. In Winter when it is about zero there is practically no moisture in the incoming air but in Summer it is common to get as high as six grains of moisture in each cubic foot of air. Therefore

assuming that the vapor passing out of the roof carries 20 grains per c.f. it will be seen that the net amount carried off from the machine in Winter would be approximately 20 grains per c.f. but in Summer it would be about only 14 grains per c.f. Therefore it would be necessary to pass through the room about one-third more air in summer than in winter. The common practice has been to run the exhaust fans fast enough to take out the amount of air required in the summer and then pull that much excess air in the Winter just the same, which is not economical. We have, and are still working on the problem of an automatic control to vary the amount of exhaust air by the requirements but this matter has to be handled rather carefully due to a realization of the fact that the machine tender's principal duty is to manufacture paper and not to operate a ventilating system and whatever is done must be done without interfering with or distracting the attention of the machine tenders.

THE PAPER INDUSTRY IN THE LAKE ST. JOHN DISTRICT

The following impressions of a Montreal visitor to the Lake St. John, P. Q., district will give an idea of the work now being carried out by the Quebec Development Company, in conjunction with Price Brothers. When this work is completed we may expect a considerable expansion in the pulp and paper industry there, and also a development in mining and other branches. The visit was made last week to Chicoutimi, where Price Bros. are extending their mill, to Kenogami and to Grand Discharge, where very extensive operations are being carried out.

At Chicoutimi a dam is being constructed to develop a power of about 10,000 h. p., which will be transmitted over lines, now completed, to Grand Discharge in order to provide the power for the great work at that point. The Chicoutimi development will flood a large area of land and will wipe out the village of St. Cyriac. At Kenogami Price Bros. are installing two additional Walmsley newsprint machines. On the trip from Kenogami to Grand Discharge we found evidence of an awakening in the way of commercial activity. Many new houses are being constructed, and some enterprising people are putting up stores in anticipation of trade in general commodities.

Owing to the lack of railway facilities, goods and materials for the work at Grand Discharge have to be hauled there from the rail-head. The fact that a line is to be completed to Grand Discharge has naturally increased the value of land in that district. It looks indeed as if the Lake St. John region will be greatly developed by reason of the immense amount of electrical power which will be ultimately available.

The Camp at Grand Discharge is admirably situated on the side of the River Saguenay. Many houses have been erected, together with a club house so that the 2,000 men are being well looked after. Lake St. John feeds the River, and has three outlets. The foundations for the main dam are being built, and later the dam will be extended right across the river. This will back up the water 18 to 20 feet, and give a sufficient head of water to develop about 600,000 horse power. The work will be of immense benefit to the Province of Quebec, and we may, with the cheap power available, look for the establishment of many industries in that district.

THE EXODUS

(Contributed)

The pulp and paper mills have been no exception in the deserting of skilled and unskilled employees to industries to the South of us. The high wages prevailing in the American cities is the magnet which is drawing many a promising young man out of Canada. One large pulp and paper mill, to my knowledge, lost five skilled men in as many days, the reason given for leaving being their desire to go the United States for the higher wages. (The correctness of this is doubtful.)

The pulp and paper industry has felt this drain much more keenly than the average manufacturing plant. Situated as most of the paper mills are in small towns and in some cases mere villages, the management is often hard pressed to keep their young men from drifting to the city. Some companies recognizing a lack of recreation facilities have endeavored to make life more enjoyable around their plant by means of social service work. Other companies have simply met the higher wage problem with individual increases. The latter course, however, is retaining employees.

One mill hand was heard to remark, "Give me good wages and I will make my own social life." In that remark the whole question of social service lies. Is it worth while? Does it accomplish its object? Certainly the opinion of employment managers differ on these points. The writer knows of two large mills situated in the same town, one does everything possible to make life pleasant around the plant, the other mill takes no interest whatever in their employees. What are the results? At a time like this when there is a decided drift of Canadians out of this country, one would expect to find the employers of the last firm the most discontented of the two, but such is not the case, it is the employees of the first firm who have shown a tendency to look for green fields elsewhere. The reason is not hard to seek, the second firm pays better wages than the first firm, and hence there is not the same inclination to leave, which goes to show that employment managers must not expect to keep their firms' employees content by means of social service work alone. The workman's natural tendency is to strike a balance between the advantages the manager offers in salary and promotion, and those held out by other employers. No appeals less tangible are allowed to stand in the way.

There are many places, of course, where because of the location the factory force must depend upon itself for diversions and no doubt annual picnics and other occasional outings are not only recreative for the workers but help also to foster an esprit de corps. The effort, however, which is so often made to make the factory a social center is certainly debatable. The average man likes to take his recreation away from the factory or office and in this respect all workers are very much alike.

The employment manager in times such as these, will find that the broad basis of appeal is pay scientifically adjusted to individual effort, supplemented with a proper proportion of welfare work; this latter must be in addition to, and not made a substitute for good wages.

Forget not to show kindness unto boys, for thereby some have entertained great men unawares.

No Cause For Alarm In The Pulpwood Embargo

By FRANK J. D. BARNJUM

During the recent debate in Parliament over the proposal to stop the exportation of pulpwood, one of the honorable members, speaking in Opposition said that he viewed with alarm the loss of the American market for the pulpwood cut by the settlers. Apparently, however, he saw

No cause for alarm in the fact that these same settlers, by carelessness in burning their refuse, are destroying millions of dollars' worth of raw materials which might otherwise be utilized by our great wood using industries, (second only in importance to agriculture itself), to say nothing of the losses they are inflicting on themselves and their fellow-settlers in the destruction of their homes and other property.

No cause for alarm in the fact that Canada, by allowing foreigners to exploit its raw pulpwood, is supplying fifty or more foreign pulp and paper mills, in competition with our own, with cheap raw material and that Canadian workers are being thereby forced to follow the raw material out of the country in order to find employment in its conversion.

No cause for alarm in the fact that we have already this year sustained the greatest forest fire losses in Canada's history, with the possibility of having the whole of the northern forest area of Ontario, Quebec and New Brunswick completely devastated before the year is over.

No cause for alarm in the fact that our losses from freshets this year, due entirely to forest devastation, have exceeded anything before recorded.

No cause for alarm in the fact that immense damage was sustained by our power and storage dams in the spring, due solely to the same cause, nor in the fact that many of our large industrial plants are forced to close down or to run on part time only for four or five months in the year owing to lack of water.

No cause for alarm in the fact that our agricultural industry itself is menaced by the condition that is fast approaching and that threatens to turn our crop-growing lands into vast deserts.

The bona fide settler is undoubtedly entitled to every reasonable consideration, yet it is to be considered that Canada's losses during the first few weeks from forest fires, many of which originated in the carelessness of settlers, approximated $100,000,000 without taking into account the enormous potential value of the young growth destroyed, while, on the other hand, the total annual receipts for land sold to settlers in the province of Quebec, where the losses are greatest, only amounts to about $100,000, against which the province spends in the neighbourhood of $2,000,000 in assisting the settlers and in building roads and bridges for their accommodation.

How much better it would be to confine these settlers to land already cleared, of which there is great abundance, where their opportunities for starting fires would be negligible and where they will find not only an immediate market for their produce but nearby opportunities for employment, such as that afforded by the pulp industries, in their off seasons.

It is to be noted that former Premier Drury in the recent Ontario election made use of the cry of protection of the settler's right to sell his wood where and how he please and spoke against the embargo. The results show that the argument was not taken seriously and, indeed, I have received many letters from Ontario saying that it contributed to the defeat of Mr. Drury and his government.

Another honorable member of the House voiced fear of American retaliation if Canada took steps to protect its rapidly dwindling supply of pulpwood. This can only cause humiliation to a people who have behind them the history and the prestige of the greatest world-power ever known, the British Empire. In addition to that, it is pure bunkum. When have the politicians of the United States waited for a cause for "retaliation" when it was to their interest to put the screws on Canada and to bar out practically everything which we could export to that country, except such things as they are obliged to have, including raw materials and pulp and paper? We have a remedy for this, if we would use it, in building up an intra-Empire trade.

The anthracite coal bogey was also brought out in the discussion, our alleged dependence on the United States and the possibility of reprisals in the shape of cutting off our coal supply being held up before us. So long as the American coal producers have coal to export — when not at the mercy of mine and railroad strikes — they are only too glad to supply the Canadian market. It is only a short time ago that G. H. Cushing, one of their largest coal operators, publicly stated in Montreal that the American coal producers valued highly the Canadian market and were prepared to fight for it, if necessary. If the Alberta mines he said, reduced their price 25 cents a ton, the Americans would cut theirs 50 cents, and if the Welsh mines,, which have recently found a market in Canada reduced their price one dollar the Americans would cut their's two dollars. This does not look as though the Americans would deprive themselves of the Canadian coal market just out of spite, but it does prove that when our parliamentarians talk of a coal embargo they are using political bunk.

The pseudo plea for the settler is off the same piece of bunkum. An embargo on pulpwood will not injure the settler; it will greatly benefit him. The value of his wood will not deteriorate and in a short time the market he now has in the United States will be transferred to this country. No one, by the way, seems to be concerned about the mechanic, the tradesman and the laborer, all of whom suffer injury when raw materials which ought to be worked up in this country, are allowed to be shipped away. Surely their interests which are numerically much greater, are entitled to at least as much consideration as the settlers'.

No one seems to have given consideration to the interests of the railroads, or the fact that the added increased revenues from additional freight that would follow the development of the pulp industry, if this raw material now exported were worked up at home, would be sufficient to wipe out the present deficit of the Canadian National Railways. A carload of pulp wood shipped out of the country means a carload of freight and nothing more. A carload of pulpwood converted into paper in Canada means four car-loads of freight going into and coming out of the mill.

Still another honorable member undertook to compare pulpwood with wheat and other farm crops and to say that interference with the exportation of one was no more justified than with the other. He overlooked the fact that we have a surplus of farm crops but are fast developing a famine in pulpwood. He failed to mention that a farm crop can be reproduced every year, while it takes from 50 to 100 years to reproduce a crop of pulpwood. There is no analogy between the two. It was also suggested by an honorable member that some pulp and paper interest might be using the writer to further their selfish ends. In reply to this, I will say that I will pay ten thousand dollars in cash to any one who can show where one single dollar, paid or promised, has been contributed to the forest conservation campaign carried on by me, other than the $100,000. or more which I have expended out of my own pocket, or who can show that there is or has been associated with me in the work any individual or interest who had my profit to gain by the work I have carried on. In so far as being interested on behalf of any pulp or paper industry is conserned, I would add that if I had my way not another live growing tree would be cut in Canada for twenty-five years for any purpose whatever. I have advocated this policy in many of the articles I have published. I know this is not possible to bring about and that the cutting of trees will continue while there is a tree left standing. The next best method to adopt is to see that what trees are cut shall be manufactured in Canada so that Canadians may at least reap the full benefit of their own devastation.

The fact must also be borne in mind that with increased investments in pulp and paper mills we should have far greater forest protection than we do where only pulpwood operators, who have no interest other than to get the wood shipped out of the country at the smallest possible cost and who, leaving nothing but a lot of slash and inflammable debris behind them, are the chief beneficiaries of our present forest policy.

A further argument in support of the embargo which the Government has undertaken to impose, is that the large investments in new mills in Canada which will follow its enforcement, will augment considerably the federal and local revenues derived from income and other taxes and thereby assist in lightening the load of the Canadian tax-payer which, everybody agrees, is altogether too burdensome.

No one will be injured by the embargo, not even the pulpwood dealer. Just as much will be sold and used, as long as the supply lasts. The only difference will be that it will be sold to be manufactured in our own country instead of going to enrich another. It only takes eight months to erect a pulp mill and with a six months' period allowed the Act takes effect there will be ample time for readjustment. A six months' latitude will allow for the shipment of all wood now on hand and it takes another six months' operation to prepare a new cut.

In conclusion, let me point out that an embargo on pulpwood is only the first step towards the proper conservation of our forests and the regulation of their utilization. I predict that we shall have to go much further and that within two years the authorities will find it necessary to prescribe both the number and the size of the trees that any holder may be allowed to cut from his holdings, whether private or public. In this connection, I would point out the serious mistake that is being made in allowing half rates on stumpage for fire-killed timber. This creates a temptation for some of the smaller operators to allow fire to run through areas which they intend working, which some of them find it impossible to withstand.

With the comparatively small amount of live growth now remaining, cutting should be confined wholly to dead timber just so long as the same is fit for use, and there should be no reduction in the stumpage rates on that account. We have already too many temptations and incentives for forest fires.

Some selfishly or politically actuated people have said, in opposing the embargo, that we must not interfere with private rights, ignoring the fact that, at worst, less than two per cent of our people would have their right affected in any way, while those of the remaining 98% would be immeasurably benefited by the new legislation. But it is not impossible for any country to adopt laws that do not in some measure infringe on private rights and on personal liberty. Hunters and the fur industry are very drastically controlled in Canada, so are fisherman and the fishing industry. In Heaven's name, then, why hesitate to control the most important and vital resource we have and without which there would be no fishing, no hunting, very little agriculture and not much of anything else.

This is not a question of free trade, reciprocity or protection, as some of our politicians would try to make it, but is simply one of national self-preservation. Under present methods we are rapidly heading towards national suicide.

CHEMICAL EXPOSITION EXHIBITORS MEET

Whether or not the Chemical Exposition should be held every year as is now the custom, or every second year in the future, remained undecided after a long discussion at a meeting of exhibitors at the Chemists Club, New York, on Thursday evening, June 28th. When the final vote on the question was counted, including some companies which had cast their ballots by mail, the result was a tie vote. As only about twenty-five percent of exhibitors who have thus far arranged for space at the 1923 Exposition, were represented by the vote, it was decided that the management should conduct another ballot by mail, and that this should be taken as the decision of the exhibitors.

As to whether or not foreign products should be permitted a place in the 1923 and future Chemical Expositions, a vote showed a large majority against the showing of products from Europe.

WESTERN CANADA PULP

It is announced that a reorganization of the Western Canada Pulp and Paper Co. is under way. The plant is located on Howe Sound, B. C., and two companies have been formed, one to assume the assets, the Howe Sound Pulp and Paper Co. to have control of the pulp and paper mill, which is about 12 miles from Squamish and might eventually be fed by power from the Bridge River Power Company's plant. The timber limits on the north end of Vancouver Island are said to have been taken over by the Port McNeil Lumber Co. It is anticipated that if negotiations should be completed in Toronto and New York soon and the market picks up for kraft pulp and paper, the Howe Sound plant would resume operations.

"PAPER PROFITS"

BY THOS. J. BURKE, C. A.

Secretary-Treasurer—Cost Association of the Paper Industry and

Assistant Secretary—American Paper & Pulp Association

The term "Paper Profits" has a very significant meaning in the financial world. Such profits, of course, represent profits made according to the books, but not yet converted into cash. For paper manufacturers perhaps the term "paper profits" has a different meaning, namely, profits made by making paper. It would seem that many paper manufacturers do not appreciate the fact that they are really in business to make "profits" rather than "paper," the making of paper being merely the avenue chosen by them for the making of profits.

The time has come when owing to world-wide competition it has become necessary to manufacture on an increasingly larger scale, and thus it has become more difficult for manufacturers to keep in direct contact with the different phases of their manufacturing operations. They have had to delegate different parts of the work to assistants and to rely on these assistants to keep them informed as to what is going on in their departments. Since each department must influence to some extent the work of other departments, it can easily be seen there must be close co-operation between all of them if the chief executive is to receive correct information from them all, and thus be in a position to judge correctly regarding the efficiency of his mill. The question is then, how can such close co-operation best be accomplished? Of course, the information the executive wants more than anything else concerns the "cost" of manufacturing his different lines, and the expense of selling and distributing them, because then he is in a position to judge whether he can compete successfully in the various available markets.

As a rule, executives are not accountants, and often have little patience with the stereotyped accountant's reports. They want the information, but they want it supplied in such a way that it can be easily assimilated. Cost accountants in the industry are gradually coming to realize that this is a fact, and that it is partly their own fault that the importance of the work they are doing has not been generally recognized by their employers. On the other hand, these employers, many of them should be willing to admit that they themselves have not fully recognized the fact that they must have absolutely dependable cost figures if they are to carry on business successfully. They have all realized the necessity of getting the services of the best available salesmen, knowing that if their products were not pushed and brought to the attention of buyers in a proper manner, their receipts would fall off, and consequently, their profits. The just as important point that they must know just how much profit these receipts include, does not seem to have made such an impression on them. Many large mills have adequate cost departments, but the men in charge of these departments seldom receive the same co-operation from the executive as that given the Sales Manager. Just as long as this condition exists, the pulp and paper industry will have periods of big losses, because many mills will continue to rely on their sales departments to carry them over periods of depression as best they may, instead of adopting the policy, during such periods, of at least refusing to sell below cost by getting absolutely dependable cost figures from their cost departments and instructing their sales managers to sell paper at or above these figures, or not at all. The trouble is that when business improves and paper can be sold at a fair price, many executives do not think it necessary to worry about their cost figures. The point that if the cost department is to serve them satisfactorily it must have reliable figures during good as well as bad times, is overlooked. It is just as important to have reliable cost figures in good times as well as bad times, especially when all the items entering into the cost of making paper are rising faster than selling prices. It is really difficult to understand how some big mills are conducting their business with the unsatisfactory cost systems which they are now using.

The fact that the pulp and paper industry is one in which the amount of capital invested is very large in comparison with the annual turnover is very important, and should never be overlooked. This fact makes it imperative that if a fair margin of profit is to be earned on this capital, *all* sales must include their share of profit. Since it is impossible to make agreements legally to restrict production, and of course, quite impossible to regulate demand, we shall always have periods of good and poor business. The only thing the industry as a whole can do to restrict its losses during periods of poor business, is to see to it that every manufacturer keeps himself well informed regarding his costs, and if we are to rely on the statements of the Chairman of the Federal Trade Commission, there is no legal objection to groups of manufacturers agreeing not to sell their products below these costs. Such agreements, of course, will be worthless if manufacturers do not know what these costs are, hence the necessity for, and the importance of, having thoroughly reliable cost figures. Another point which must not be overlooked is that there is a surplus machine capacity within different groups of the industry which make it doubly necessary that all manufacturers should use reliable cost methods if they are to compete fairly one with another.

The Cost Association for several years past has been impressing these points on paper manufacturers. The officers of the Association believe that the best approach to the solution of the problem of getting all manufacturers to realize these facts is by means of standardized cost estimate sheets, because these sheets which have been carefully drawn up, will contain a list of every item which enters into the cost, so that it will not be possible for any manufacturer to overlook any of these items when making up a cost estimate.

The next step is to get manufacturers to ask their cost departments to compile cost estimates on supposition orders in order to ascertain whether these departments use the forms in a correct manner, or whether some manufacturers have already devised a better form which can be used by the whole group instead of the one devised by the Association. This, of course, is only a beginning.

To carry the work still further, it should be possible to obtain from groups of manufacturers cost figures relating to separate operations, and by compiling a composite report from these figures, enable them to make comparisons on a fair basis. Such comparison should enable them to form a fair judgment regarding the manufacturing efficiency of their mills, as compared with other mills making the same products. Ignorant competition, meaning competition from manufacturers who are not reliably informed regarding their manufacturing costs, is the bane of all industry, and in times of depression is particularly rife in the pulp and paper industry. This is because, perhaps, it is an old established industry which has, however, grown tremendously within the past decade. Unfortunately, as in some other industries, it has not had a real leader to guide its destinies, but like "Topsy" it has "just growed." However, there are several groups of far-seeing executives within the industry who realize the handicaps under which it is operating, and are striving to remove them. One of the greatest of these handicaps is "ignorant competition," which can never be removed until the fact is brought home to the manufacturers who form the "ignorant group" that they are really within that class, and they are shown how to get out of it. Let the leaders within the industry but once make up their minds that this work *ought* to be done, and it *will* be done, and when it has been accomplished the way will have been opened for the carrying out of many other plans for the industry's further progress and growth because the industry will then be operating on a sound, economic basis, and manufacturers will be in a position to supply the funds necessary for the financing of these plans.

COST OF DE-INKED NEWSPAPER

Mills located near cities capable of furnishing large quantities of old newspaper can produce pulp from de-inked news cheaper than they can buy new groundwood, according to cost data collected by the U. S. Forest Products Laboratory, Madison, Wisconsin. A saving of $15 a ton has been effected at one mill through the use of de-inked news instead of groundwood pulp. Such a saving would bring in a large return on the $10,000 investment needed to equip an ordinary 30-ton mill with the additional washing equipment and a warehouse large enough to hold a three months' supply of old newspapers, and it would make possible the profitable operation of some mills now finding it difficult to make both ends meet.

The itemized figures given below were obtained in a mill operating at the rate of 40 tons of de-inked newspaper stock per day. The labor, repair, and maintenance figures are taken from the yearly average for that mill. The cost of power and equipment for beating the old papers is not included since it would be the same where purchased pulp was used.

Cost of Producing One Ton of De-inked Newspaper

Pulp:		
Labor and expense		
Labor	$1.58	
Labor (general and repair)	.49	
Fuel	.82	
Power	.48	
Repairs	.51	
		$3.88
Materials		
Old newspapers, 2,070 pounds at 1c.	$20.70	
Lime, 21 pounds at ¾c.	.16	
Soda ash, 33 pounds at 1½c.	.50	
Bentonite, 155 pounds at 1¼c.	1.94	
Water, 13,000 gallons at 8c. per M gal.	1.04	
		$24.34
Miscellaneous charges		
Royalty, taxes, interest on investment in washer equipment, etc. Would not exceed		3.78
Total cost		$32.00

Relative Costs of Furnish per Ton of Newsprint

Using groundwood	
0.9 ton groundwood	$40.50
0.2 ton sulphite	12.00
Labor handling groundwood laps	.50
Total cost	$53.00
Using reclaimed old papers	
1.0 ton de-inked newspapers	$32.00
0.1 ton sulphite	6.00
Total cost	$38.00

To make the most out of the de-inked process, it is absolutely necessary that the mill be independent of the periodical manipulating of the waste-paper market. For mills situated near the larger cities such a course is very simple. In fact, a large part of a mill's supply might be collected by its own force from the neighboring territory, thereby cutting out the profits of at least three middlemen.

In stabilizing the supply of waste papers the publishers can be of enormous assistance, since the supply is directly dependent upon the amount of paper saved by the average householder. With proper newspaper campaigns, such as were carried on during the war, the supply of waste newspapers could be doubled without much effort; and if with proper warehouse facilities the demand were stabilized, the supply would continue.

With a more constant demand, the need of so many agents between the householder and the paper mill would be avoided, and the householder might receive at least 50 per cent of the price paid by the paper mill instead of only about 10 per cent, as is often the case.

MUST COME TO THE SUSTAINED YIELD

Mr. George W. Sisson, Jr., former president of the American Paper and Pulp Association, at a conference held in Chicago, stated that in the northeastern States, where the Pulp and Paper industry is concentrated to a degree found in no other section, and where the forests have been heavily overcut for many years, the industry cannot operate *without the importation* of a large percentage of its wood.

No country on the globe exports pulpwood in the raw, except Canada. Canada's export of pulpwood amounts pretty close to 1,250,000 cords per year. The pulp and paper manufacturers of the U. S. A. are anticipating an embargo on Canadian pulpwood for some time. As far as the actual supply of timber is concerned Canada is in the same plight as the U. S. A. Canada is to-day assuming the lead in the pulp and paper industry and in order to keep that lead there is only one course open for Canada: it must at all costs retrieve its wasted and diminished fortune and most of all really protect the coming second growth, and further inaugurate a policy of cutting for a sustained annual yield.

Such measures are absolutely necessary to save for Canada its prominence as a pulp, paper and lumber producing country and save the country from the ranks of the "Has Been."

Fort Frances, Ont., FRED BROWN.

How To Establish An Export Department

It may be stated in broad terms, writes a correspondent in the London "Times Trade Supplement", that an export department added to a business automatically acts as an insurance for home trade, and it is possible for a very large proportion of manufacturers and traders to introduce such a department into their business at small expense and with every prospect of satisfactory results, provided they approach it intelligently.

Naturally the first thing a trader must consider is which markets offer the best prospects for the particular lines in which he is interested. He must study the peculiarities, the manners, and the customs of the country he selects; he must remember that the people he wishes to cultivate are of a different race, temperament, and probably language; that they have different ways of thinking, different business methods, different laws, and in the majority of cases vastly different custom house laws and regulations. In short, in order to achieve the greatest success he must adapt himself and his tactics to his customers' ideas, whims, and fancies. To him they may seem peculiar, but he must always remember that it is he who is the foreigner, not they. Profits are usually considerably greater than those secured in the home trade, while the expenses of conducting the department are certainly no higher.

Study of the Markets

A careful study of the markets is a very necessary preliminary, and much exceedingly valuable information can be obtained from custom house returns. Such study frequently results in material saving of expense, since what will be keenly appreciated in one country will fall flat in another, and no amount of energy and push will ever render it successful. As an illustration of this may be mentioned an utterly futile campaign of American manufacturers to market certain breakfast foods in South America. The cereals were lavishly advertised, house-to-house distributions of free samples made, demonstration booths were erected in stores, hotels, and clubs, where dishes were served without any charge in the most tempting styles to all willing to try them. Enormous sums were lost in this propaganda, since the products utterly failed to appeal to the public. The campaign was not confined to one country, but was prosecuted throughout practically the whole of Latin America, each country producing negative results.

Had the manufacturers but made a study of the markets and the peculiarities of the inhabitants they would have been saved much loss of both money and prestige. Customs of countries are always difficult to eradicate, and particularly is this the case when they date back for centuries and become traditions. A survey of even the methods of living of Latin races would have at once elicited the fact that their breakfast is of the lightest, and never varies from coffee and rolls.

As an illustration of good marketing may be cited the case of a prominent Japanese firm who manufactured agar-agar. Their output grew until it was far larger than their home market demanded. Prices were rapidly falling and they were faced with severe losses. Their trade was entirely confined to their own country. They conceived the idea of adding an export branch to their business. They made a careful study of the world's markets and ascertained which countries were the principal consumers of the commodity they manufactured. They then proceeded to get the market prices ruling in the various countries and the names of the leading importers. They allocated their stocks proportionately to the requirements of the countries. The next procedure was to send samples and quotations calculated to secure the trade to the prospective customers, giving them a firm offer for a certain period of a limited amount, at the same time issuing a brief market report on the commodity, showing all the available stocks known and price fluctuations. In many cases offers were made for their entire output, but the answer was always to the effect that they would not supply more than the prescribed amount allotted to each individual territory, as their other customers' requirements must be complied with. The direct result was that in a very short time they had built up a regular trade spread over the whole world and could look forward to the sale of their entire output at remunerative prices year after year through the same channels. Had they followed the lines of least resistance and allowed one firm to purchase the whole parcel they might have made more money the first year, it is true, but each succeeding year would have brought its own troubles, and, by not putting all their eggs into one basket, they have established world-wide connections and now virtually control the agar-agar trade of the world. Apart from this line they have utilized their overseas correspondents for various other goods, to mutual advantage.

These two illustrations are well worthy of the attention of all those contemplating adding an export department to their businesses, and conclusively prove the value and necessity of a careful study of the trade possibilities and requirements, as well as the impossible trade barriers, which exist in every country.

However, let it be assumed that the investigation made denotes the practicability of overseas trade in any line handled. By the addition of an export department a trader may materially add to his returns, and the greater number of countries to which he can extend his operations the better in the long run. When one country suffers from a drought and crops are short in consequence, business there is naturally checked, but it is usually the case that other parts of the world produce bumper harvests, resulting in high prices and prosperity. — Commercial Intelligence Journal.

YOU CAN'T KEEP THEM DOWN

Last week the factory of Gummed Papers Limited of Brampton, Ontario, was struck by lightning and severely damaged. The loss was very considerable and the disarrangement of the business of course, put a temporary stop to operation. It is gratifying to note, however, that this Company is not at all lacking in courage and determination, for we understand that within two weeks the concern will again be operating at capacity, in fact a part of the plant is already turning out its products.

PAPER MAKING INDUSTRY IN JAPAN

(Special to Pulp and Paper Magazine.)

Paper and pulp industry of Japan had a very dull business year in 1922, but on entering into the present, better market conditions abroad, non importation of lower grade of paper from outside together with decrease of heavy stock accumulated made a great improvement, at least gave a great encouragement to the trade. This condition induced the Japan Paper Association, an organization that embraces all the leading paper and pulp mills in Japan, to adopt a new price, advancing one sen (½c.) in Feb. and a further ½ sen in March and April. Chemical pulp, consequently, that was quoted at 6 sen is now being quoted at 8.3 sen.

Owing to this favorable condition the Association removed the ban on 10 per cent production-control that was observed by all the association members for some time past. Thus the total production of the last six months will be greatly increased compared with that of the preceding period. Besides the removal of the production-control, there are some mills which have completed the installation of new machines indicating increased production.

As to the Pulp Industry, heavier stocks were accumulated and there are some pulp mills still idle. However, on the whole, pulp production for the last six months will doubtless show an increase under the same conditions as paper making industry.

The sales records of paper mills are showing better business turnover, but on the other hand costs of production have increased at the same time. Though the price of pulp advanced no leading paper mills have suffered seriously, as such large mills own their pulp mills to supply their requirement to a great extent. Under the favorable market conditions these paper mills must have gained profit 15 per cent above that of the preceding period.

To illustrate, two leading paper mills in Japan will give hte following reports.

Oji Paper Mill, Ltd. Total production of the last six months will be about 117,761,000 lbs. against the total sales of 118,739,000 lbs. Compared with the preceding period (May-Nov. '22) an increase of 6,326,000 lbs. in production and 13,424,000 lbs. in sales. The surplus of sales against production shows so much accumulated stocks disposed of. Though their Chosen (Korea) mill was closed, the pulp business of this company showed a very good turnover. Oji's total profit for the last six months will exceed Yen 4,000,000 (about $2,000,000). The dividend, however, will be declared at 17 per cent per annum the same as last, making a sufficient reserve to be carried over.

Fuji Paper Mill, Ltd. Total production of the last six months will be 133,952,000 lbs. against the total sales of 140,070,000 lbs. This shows an increase of 19,217,000 lbs. in production and 27,700,000 lbs. in sales. This company's straw board and pulp business proved a profitable business, and the dividend for the last six months will be declared at 15 per cent per annum same as the previous period.

FOR POSTERITY

A man does not plant a tree for himself, he plants it for posterity. And sitting idly in the sunshine, I think at times of the unborn people who will, to some small extent, be indebted to me. Remember me kindly, ye future men and women!

—Alexander Smith.

INSTITUTE ITEMS

FLOW OF STOCK IN PAPER

An answer to "Piper"

With regard to your work on the Flow of Stock in Pipes, I would refer you to the Pulp and Paper Magazine of March 2nd., where on page 160 is the conclusion of an article on Pumps. You will find here some information that I think will be of service to you.

In this connection, I was talking to an engineer and mentioned the subject of your letter, when he said that municipalities had discovered that in pumping sewage, better results were obtained by using a pump that had a low efficiency with water. It was found, however, that in pumping sewage, it was better to use a relatively small pipe so as to have a continuous flow throughout the total area of the pipe rather than to use what would naturally be chosen as a larger pipe so as to eliminate surface friction. The idea of using a smaller pipe is to prevent sedimentation of stock in suspension. This principle, I should think, would also apply to the pumping of pulp.—Editor.

A FRANK COMPARISON

One of the numerous College graduates taking our University extension course in Pulp and Paper Making, writes as follows:

"With regard to Volume III, (and I presume Volume IV and V also) I would just as soon learn the subject from the textbook as listen to lectures. I find the textbooks very clear, and the drawings and descriptions are excellent. After all, if a man is familiar with the mill-end of the business, he will derive probably more benefit by studying the books himself than he would by lectures alone, although it must be admitted that a combination of the two would be the ideal."

The writer goes on to say that he thinks a man with little previous education would have difficulty in studying Volumes I and II, but it is the experience of the Institute that a man who can only read and write, if he applies himself to the work, can make satisfactory progress with these elementary studies — in fact, his brain power increases as he applies himself.

ONE ON THE WORM

Cuthbert had been listening for half an hour to a lecture from his father on the evils of late nights and late risings in the morning.

"You will never amount to anything," said the father, "unless you turn over a new leaf. Remember, it's the early bird that catches the worm."

"Ha, ha!" laughed Cuthbert. "How about the worm? What did he get for turning out so early?"

"My son," replied the father, "that worm hadn't been to bed all night, he was on his way home."

BOOK ON BURNING OIL

The Combustion Equipment Corporation has prepared a new oil burning equipment catalog which is an important contribution to the subject of oil burning. The catalog is now ready for general distribution to all who care to apply for it. The pamphlet is really more than a catalog; it is a treatise on the handling and combustion of fuel oil, with information on the design of furnaces, etc.

PULP AND PAPER NEWS

The Bathurst Company, Limited, Bathurst, N. B., expect to have their newsprint machine running by the middle of July.

Mr. G. M. McKee was in Montreal last week. He reports very satisfactory progress with the mill of Ogdensburg, N. Y. and expects to make paper this month.

It is understood that the new capital which will be raised under the Riordon reorganization plan has been underwritten.

Mr. J. S. McKinnon of Toronto, who will be in charge of the industrial section of the Canadian exhibits at the British Empire Exposition to be held in London next year, visited Montreal last week in connection with the project. He consulted with officials of the Canadian Pulp and Paper Association with reference to the participation of the pulp and paper industry in the exhibition. It may be taken for granted that the industry will be adequately represented, space having been provisionally taken in the Canadian section. The Canadian Government expects that the full resources of the Dominion will be represented, and the Forestry Branch will include specimens of pulp and paper. The co-operation of the manufacturers is sought with a view of providing samples of products for which they desire to find an export market. This will be a splendid opportunity for the Canadian pulp and paper industries to exhibit their commodities, as the Exposition will be visited by millions of people, from all parts of the world.

Mr. T. E. Warren, manager of the Ticonderago Pulp and Paper Company, was a visitor to Montreal last week.

Mr. M. Hubley, of the Federal Paper Company, Limited, Montreal, is on a business trip as far as Halifax.

A large quantity of lumber and pulpwood narrowly escaped destruction in a fire which partially destroyed the Sash and Door Company's plant at Powasom, Ont., a few days ago. Only a small insurance was carried on the plant.

The Ontario Department of Lands and Forests, Toronto, has accepted the tender of Messrs. Grant and Dunn, of Latchford, Ont., who were the successful bidders for certain timber berths recently put up for sale. They secure a tract of forest in the township of Barr, south and west of the Montreal river, 11 1-3 miles in area, paying for the timber, which consists entirely of red and white pine, $15.53 per 1,000 feet. They also secure a tract in the township of Kitson in the Temagami Forest Reserve, 4 1-2 miles square in extent, paying $1.60 for spruce pulp and 80c for other pulpwood.

Arising from an action taken against him some time ago by the E. B. Eddy Company at Hull, J. F. Rochester, formerly in their employ as a pulpwood contractor, has entered a contra claim against the company in the Hull Superior Court for $100,000. He was sued by the Eddy Company for the recovery of $50,000 involving pulpwood transactions and judgment is still pending.

The Dominion Embossing and Printing Company suffered loss to the extent of $1,000 when their plant in a building at the corner of Jarvis and Front Streets, Toronto, was drenched by water during a fire which broke out in the building in which the company is located.

George W. Pauline, managing director of Ritchie and Ramsay, Limited, Toronto, coated paper manufacturers, leaves shortly on an extended trip to England where he will visit the scenes of his youth.

The Mattagami Pulp and Paper Company, Limited, are now producing to full capacity at their plant at Smooth Rock Falls, Ont., turning out 150 tons of unbleached sulphite pulp daily. William Ellis, formerly of the New York Division of the International Paper Company, is superintendent of the plant and is making a number of improvements. The work of relining one of the digestors has been completed.

The Canadian Barking Drum Company, Royal Bank Building, Toronto, have received orders from the Mettagami Pulp and Paper Co. of Smooth Rock Falls, Ont., for two 10' x 30' drums to be added to their present installation, making four in all. Recent orders in the United States include one drum each for the Tomahawk Kraft Paper Company, Tomahawk, Wis., and the West Virginia Pulp and Paper Company, Piedmont, West Virginia.

The Pidgeon River Lumber Company, Port Arthur, Ont. report that they are not operating their sawmill this year as they have not been able to secure suitable timber limits at what they consider a reasonable price. They contend that the Ontario Government has adopted a wrong policy of awarding too many timber concessions to pulp and paper companies where only spruce and other pulpwood are made use of, and the remaining timber left untouched. In regard to pulpwood the company say that the cut next season will be larger than ever and they look for an advance in prices as they understand that the reserve stocks of a number of the mills are very low and these firms will sooner or later have to come into the market for fresh supplies.

H. W. Guettler, President of the Canadian Barking Drum Company, and Mrs. Guettler and son, passed through Toronto a few days ago en route to Europe where they will spend some months. Mr. Guettler proposes to cover a number of the paper making countries during his trip abroad.

Toronto and Montreal members of the Canadian Paper Trade Association held an informal meeting in Toronto last week when the sales tax as it affects the paper trade was under consideration. The Association has been endeavoring to get a ruling from the Dominion Government for some time as to what interpretation was to be put on certain aspects of the regulations, and the secretary, N. L. Martin, spent several days in Ottawa last week endeavouring to get definite rulings. It was reported at the meeting that the secretary had only secured opinions on certain points from various officials and until these are confirmed no announcement as to what the sales tax means to the trade will be sent out. The Association also has the matter of the continuation or dropping of the Long Price List under consideration but will make no decision on his matter until all the questionnaires which were sent out on the subject have been returned. A considerable difference of opinion exists.

Louis Blake Duff, of the Welland Telegraph and Tribune, was the speaker at the monthly meeting of the Toronto Club of Printing House Craftsmen at the Toronto

Board of Trade rooms on June 27, dealing with the subject of the Fourth Estate. There was a good turn out of the membership and delegates were appointed to attend the Buffalo convention at the end of August.

The Toronto Typothetae held a get together at the King Edward Hotel on June 27 when two working compositors from each job office represented at the gathering were the guests of the Typothetae. The speaker of the evening was Harry L. Gage of New York who outlined the modern changes in the printing trade and the probable tend of the future.

Hon. T. W. McGarry, President of the Whalen Pulp and Paper Mills, Limited, stated in Toronto last week that the company was enjoying good business at the present time, with all three pulp plants operating and sawmill maintaining its production. He referred to an interesting change effected in connection with the Fort Alice mill whereby oil burners were installed which it was estimated would reduce operating costs to the extent of $8 per ton of pulp. Mr. McGarry spoke with great optimism of the future of the company.

A despatch to one of the Toronto papers from St. Catharines states that through the efforts of E. C. Graves and Richard Clark, Merritton, a new paper mill to cost $400,000 will be established on the town line between St. Catharines and Merritton. The new plant, it was stated, would employ 100 hands and would manufacture a high grade specialty paper previously not turned out by any mill on the continent. This item refers to the mill which, as reported some weeks ago in the Pulp and Paper Magazine of Canada, the Garden City Paper Mills are contemplating erecting. It is learned that nothing definite has been done in regard to the project other than the steps already reported.

The largest cut of pulpwood on record in the Thunder Bay district was taken out of the forests in that area during the past winter according to figures just made public by the Crown Timber Agent at Port Arthur. The total cut was 263,409 cords, which is over 100,000 cords more than that cut during the winter of 1922. The value of the pulpwood was $3,106,908. The value of all timber cut during the cutting season in the Thunder Bay district was $4,405,000.

A contribution of $1,000 to the Memorial Hospital Fund at St. Thomas, Ont., has been made by I. H. Weldon, Toronto, President of the Provincial Paper Mills, Limited. Mr. Weldon is a native of St. Thomas, and a sister is superintendent of Amasa Wood Hospital in that city.

Lieut. Col. Thomas Gibson, Toronto, Vice-President of the Spanish River Pulp and Paper Mills, Limited, attended a meeting of the directors of the Lake Superior Corporation at Sault Ste. Marie, Ont., last week. The Colonel is General Counsel for the Corporation.

A. P. Costigane, Secretary-Engineer of the Ontario Pulp and Paper Makers' Safety Association, with office in Toronto, has gone on a two weeks tour of inspection to Port Arthur, Fort Francis, Dryden and other pulp and paper mills in that district. While at Port Arthur, Mr. Costigane will present the safety shield won in the recent competition.

The Howard Smith Paper Mill at Cornwall was the scene of a fatal accident on June 28 when William George Montroy, 24 years of age, of Williamstown, was struck on the head by a large piece of pulpwood. The young man was leaning down to pick up a piece of wood preparatory to placing it in the conveyor when the stick that struck him fell from the top of the pile about forty feet high.

NEW BRUNSWICK NEWS

The Bathurst Company Limited of Bathurst, N. B. has just won a signal victory over the New Brunswick Workman's Compensation Board. The board has been endeavoring to collect annual levies from the company, and instituted action against the company for $31,000, for 1922 and the same sum for 1923. The company has been a consistent foe of the board, and has refused to pay the levies. Two judgments were obtained by the board but these were appealed by the company, to the New Brunswick supreme court.

The latest verdict is in favor of the company in full, namely, $62,000. The judgment may be appealed by the board, it having been reported that the board will go to the privy council if necessary to secure collection of the levies from the Bathurst Company Limited. The company charged that (1) the company maintained its own compensation system for all employes injured at the pulp mill, paper mill, lumber mills and in the forest operations, and therefore should be exempt from application of the provincial compensation law (2) that the levies were exorbitant (3) that the bulk of the moneys received from levies on employers went to pay expenses of the board (4) that the employes should be fored to contribue.

The continued forest fires in New Brunswick are creating much damage to pulpwood holdings in the northern sections of the province. The Snowball interests of Chatham, have been heavy sufferers. The provincial police try to fasten the blame for the fires on the guilty parties. In one case a stipendiary magistrate fined a man $100 for starting a fire in the woods without holding a registration certificate entitling him to enter the woods. It is known that hundreds of persons in the northern sections of the province have been in the woods without certificates. The department of lands, forests and mines have now recalled all permits, for the northern countries.

The Nashwaak Pulp and Paper Company Limited, operating a pulp mill at St. John, N. B. and with large tracts of pulpwood along the Nashwaak River in central New Brunswick, has now slightly over fifty per cent of rafting operations completed. This concern has eight million feet of logs rafted thus far, of a total of fifteen million feet to be rafted. Because of a strike of the rafting crew, at present in force, rafting has been suspended indefinitely. About forty men were affected. They demanded $3.25 per day of nine hours. They had bad been receiving $2.75 per day of nine hours. Only rafters were involved in the strike, scalers and foremen, and other employes at the boom, remaining at work.

Price Bros. Company, Ltd., Kenogami recently put into operation a new wood preparing plant consisting of 2-12 x 45' Paulson patented barking drums furnished by the Canadian Ingersoll Rand Company. The plant is giving excellent satisfaction.

The Anglo Newfoundland Development Company, Grand Falls, Nfld., recently put into operation their new wood preparing plant including 2- 12 x 45' Paulson patented barking drums furnished by the Canadian Ingersoll Rand Company.

CASH FOR BACK NUMBERS

Readers who can spare copies of the following numbers of the Pulp and Paper Magazine will confer a great favor by communicating with the Circulation Manager. The issues for which requests are being constantly received are:— Feb. 22, March 8, April 12, May 24, 31.

The Woodlands Section

PERPETUATING A PULPWOOD SUPPLY

By D. E. LAUDERBURN,

Forest Engineer, Department of Woodlands, Pejepscot Paper Co., in "Canadian Forestry Magazine

The job of a woodlands department of a paper company is to see that the supply of the principal raw material is continuous for as long as the business lasts. Either the company has in view a time when it plans to liquidate or it plans to continue producing indefinitely. The Forest Engineer therefore, as technical adviser to the management, has before him the problem of having the forest properties in as saleable condition as possible at the time of liquidation or the equally interesting task of seeing that the supply of pulpwood is perpetual at a fixed amount per annum.

In the case of the Pejepscot Paper Company, the latter policy, that of continuous production with an annual fixed perpetual consumption, is the one being followed. That, therefore, is the essential task of the Forest Engineer, to study the resources available with a view to supplying perpetually a fixed amount of wood each year.

The first step in the management of a timber property is the taking of the forest inventory, in other words, the timber estimate. A complicating factor here, however, is the fact that a forest is not a stable thing. The trees are constantly growing or dying. And yet, for practical use, the forest inventory must not only be kept up-to-date but must be projected tentatively into the future. We must not only know what we have, but what we are going to have. The forest is like a storehouse. All that is in it and goes into it must be charged to it; all that comes out should be credited. The forester is the clerk who keeps the records. But the clerk at the storehouse can stand at the door and count all that goes in. Not so with the forest. What comes in, is a layer of wood laid on each living tree under the bark, something unseen, the cumulative effect only being visible after a period of years.

To ascertain all the facts appertaining to the perpetual forest inventory, the Pejepscot Paper Company is carrying out what might be called a permanent cruise. Cruise lines are run systematically throughout the properties. Quarter-acre plots are laid off at regular intervals on the cruise lines and tallies of the timber made on these plots. These plots are permanently established by blazing a tree at or near the center and scribing on it the number of the tree and the cruise line. The cruiser tallies all trees he thinks will survive to maturity. Borings are made in a specified number of trees on each plot and the rate of diameter growth is recorded. Thus the forest storehouse clerk tallies the goods coming in. From these measurements of diameter growth and from measurements of the heights of trees of each diameter the volume of these trees at future periods is estimated and the result shown in yield, cords per acre per year, usually a fraction of a cord on each acre annually. It is planned to check these growth predictions in the future by measuring and tallying these permanently established plots over again, perhaps every five or ten years.

The following hypothetical tabulation shows how a perpetual forest inventory might appear:

	Cords
Original Capital Stock	135,099
Cut, Winter of 1917-1918	11,963
Left, Spring of 1918	123,136
Growth, Summer of 1918	5,722
Capital Stock, Fall of 1918	128,858
Cut, 1918-1919	9,533
Left, Spring of 1919	119,325
Additions by Purchase 1919	10,840
Original Stock & Purchase	130,165
Loss from Fire & Budworm	12,976
Capital Stock after Deducting Losses	117,189
Growth, Summer of 1919	5,931
Capital Stock, Fall of 1919	123,120

The above tabulation shows that cutting at the rate of 10,000 cords per year will eventually deplete a property with an annual growth of 5,000 cords. Another property may show the reverse, annual cutting less than the annual growth. Thus the operations may be adjusted to what the various properties will produce. If the studies show more is being cut than is growing, more forest land should be acquired or the yield in the future increased by planting, thinnings, girdling of wolf trees or any other means applicable.

The precision with which all this can be done is questionable, of course, but it is not difficult to arrive at an approximately accurate estimate of yield which may be used tentatively until we learn more about the rate of growth and also the rate of death, in our forests.

The company requiring a sustained yield, however, cannot be satisfied with merely ascertaining that yield. The lands must be made to produce their maximum of the most desirable species. With this in view, the Pejepscot Paper Company has planted many hundreds of acres of old fields where natural seeding in was slow. Well-stocked cut-over lands and abandoned farms have been purchased. Properties essentially hardwood will be stripped of their pulpwood and held for their hardwood yield or sold.

That, essentially, I feel, should be the forest policy of a company requiring a continuous and perpetual supply of any wood material. Forestry is not for show or advertising purposes. Forestry is absolutely essential for the efficient management of any forest property.

Do not be a careless camper. Extinguish all fires after every meal. Before breaking camp make a general survey to prevent bush fires. Make the woods safe for others.

ABSTRACTS OF FORESTRY ARTICLES

B-2 Reforestation in Ontario. E. J. ZAVITZ. **J. For.** XX No. 1 (Jan. 1922, p. 18). Discusses forest types and stands of the Province. Estimates that 10 million feet of white and red pine for the Province is an outside figure. "In little more than half a century we have almost exhausted the virgin supplies of our most important saw timbers." "We are cutting annually at least 100 million board feet more than our pine areas are producing." Natural regeneration cannot meet our future requirements of pine. Thousands of square miles will not reproduce white and red pine for centuries to come, unless they are artificially introduced. This is largely the result of fire. Advocates the reforestation of 10,000 acres of denuded Crown lands annually to white and red pine. Five planting stations could be equipped for $100,000, and annual maintenance would cost $50,000. The annual planting budget at $15 per acre, would be $150,000. In 60 years, the new forest would produce at least 400 million board feet each year, or 50 million feet more than the present annual cut.-C.L.

B-2 Research Work of the Dominion Forest Service. W. G. WRIGHT. **J. For.** XX No. 1. (Jan. 1922, p. 62). The object of this work is to determine how best to secure a continuous crop of desirable species in cutover lands. This involves cutting regulations or replanting, or both, according to local conditions. Studies are under way in Ontario, Quebec and New Brunswick, in co-operation with provincial forest services and pulp and paper companies, as well as on Dominion forest reserves in the West..-C.L.

B-2 American Trees in Scotland. JOHN SUTHERLAND. **J. For.** XX No. 1. (Jan. 1922, p. 71). Douglas fir and Sitka spruce are most used for planting in Scotland. The Coast type of Douglas fir is preferred to the Interior or mountain type. The first plantation of this species was established in 1860; at 52 years the average height was 88 feet, and the volume in 1914 with 143 stems per acre was 6,276 cubic feet; when 40 years old two hundred pounds sterling per acre was offered for the crop. Measurements are quoted for other plantations, and the adaptability of several North American species to sites is discussed. In the extensive planting program of the British Forestry Commission, six per cent will be Douglas fir and 17 per cent Sitka spruce.-C.L.

B-2 Progress of British Forestry. EMPIRE FORESTRY JOURNAL 11 No. 1, (April 1923 p. 15. The program of the British Forestry Commission includes the planting up, of 150,000 acres in 10 years. To March, 148,000 acres had been acquired. Financial aid is given to encourage planting by private landowners, 10,000 acres having been so reforested last year. This work has aided toward solving the unemployment problem.-C.L.

B-3 Some Problems of Forest Pathology in Ontario. DR. J. H. FAULL. **J. For.** XX No. 1. (Jan. 1922, p. 67) But rots constitute the outstanding destructive agencies at work in Ontario forests; to these all forests are more susceptible with increasing age. They decrease the value of stumpage and are responsible for most windfalls, with resulting increase in fire hazard. The needle blight has also caused a great deal of damage, particularly to white pine but affecting other species as well. The cause is not definitely determined, but it may be due to periods of drought where soils are shallow or leachy. Our knowledge is greatly deficient as to the diseases of trees.-C.L.

B-9 Timber Administration of the Dominion Forest Service. T. W. DWIGHT. **J. For.** XX No. 1, (Jan. 1922, p. 4). Describes the administration, protection and research work connected with the 22 million acres of Dominion Forest Reserves in Western Canada. These areas are administered by technically trained foresters. Fire has reduced the area covered by virgin forests to less than 10 per cent of the original. Much of the remainder is covered with aspen and young coniferous growth. In the granting of timber sales, it is stipulated that only timber designated by the forest officer shall be cut. Trees are marked for cutting, so that each part of the stand can be treated in the way that seems to best suit the conditions. A great improvement over unregulated logging has been achieved. It is required that brush from all timber cut shall be burned. Lopping and scattering has been found unsatisfactory has been found unsatisfactory. The tendency is to burn the brush as soon as the trees are felled. Successful brush disposal at a moderate cost is only secured when it is accepted as a regular part of logging operations.-C.L.

B-9 Status of Forestry in Western Canada. W. N. MILLAR. **J. For.** XX No. 1. (Jan. 1922, p. 10). Outlines development of forest administration in the Prairie Provinces and British Columbia. Extension of Dominion forest reserves, and re-organization of administration and policies. Organization of British Columbia Forest Branch. Fire protection work of Dominion Railway Commission. Slash disposal required on all timber sales in Dominion forest reserves. Grazing administration. Aerial fire patrol by Air Board. Nursery and planting work of Dominion Forestry Branch. Forest Products Laboratories and field research in forestry. Forest School at University of British Columbia.-C.L.

B-9 The Forest of Quebec. G. C. PICHE. **J. For.** XX No. 1, (Jan. 1922, p. 25). The merchantable forests of the Province are estimated to cover 130 million acres, of which six million acres are privately owned, the balance being Crown lands. Licenses to cut timber, have been granted on 44.5 million acres of Crown timber land. These licenses are renewable annually. From 1867 to 1920, Crown timber revenues have totalled $48,148,220. Enormous damage has been caused by fire, wind, insects and fungi, and the annual increment is very small. Discusses the economics of the logging industry in the province; and reforestation of waste lands by the Forest Service and by private agencies. The present annual cut for licensed lands is one billion feet, or an average of around 20 board feet per acre, which the author considers to be much less than the annual growth. He therefore forecasts the possibility of a substantial permanent increase in the rate of cutting, provided there be adequate protection from fire, coupled with the adoption of methods of exploitation calculated to leave the cut-over lands in a condition to produce another crop. The present plan of heavy cutting on small areas should be changed to a selection system over larger areas, removing half the stand and coming back each 40 years for another cut.-C. L.

B-9 Forestry Problems in British Columbia. P. Z. CAVERHILL. **J. For.** XX No. 1. (Jan. 1922, p. 44). The total area of the province is 355,000 square miles, of which 155,000 square miles may be classed as forest land. Of this, 50,000 square miles contains merchantable timber estimated at 366 billion feet. There are 100,000 square miles of old burns in various stages of restocking. The first and greatest problem is protection from fire and insects. Co-operation of all agencies concerned is being secured and mechanical equipment and personnel are being increased. Attention is paid to securing closer utilization of material in the woods, and to the development of domestic and foreign markets. Some progress has been made toward correct silvicultural practice and research is under way to add to the knowledge of what practicable measures are necessary to ensure forest growth of desirable species on cut over lands. In all cases, the urgent necessity is emphasized of preventing the recurrence of fires. C.L.

B-9 Forestry Administration in New Brunswick. G. H. PRINCE. **J. For.** XX No. 1, (Jan.. 1922, p. 54). Area of the province 17.5 million acres, of which 12 million acres are forest. Of this, 7.5 million acres are Crown lands, 4.5 million acres of forest being in private ownership. Eighty per cent of the forest area contains merchantable softwoods; the hardwoods remain largely untouched. Over one-half of the provincial revenue is from Crown forests. The annual cut on Crown lands is 250 million feet, and on private lands 350 million. Administration of Crown timber lands is under the Provincial Forest Service. Diameter-limit regulation of cutting applies to red and white pine and to spruce (112 inches), also to jack pine (10 inches). The large private holdings are also operated on a sustained-yield basis, closely similar to Crown lands. Forest fire legislation is thoroughly modern. A very intensive classification of Crown lands is under way, four million acres having been covered. This forest survey has proved exceedingly valuable for purposes of administration. Forest research is under way, in co-operation with the Dominion Forestry Branch, following the dissolution of the Commission of Conservation.-C.L.

B-9 Report of First Annual Meeting of British Empire Forestry Association. EMPIRE FORESTRY JOURNAL, 11, No. 1, (April 1923, p. 24). Presided over by the President, H. R. H. the Prince of Wales, whose address summarizes briefly the situation as to timber supplies within the Empire.-C.L.

B-9 The Indian Forest Department. R. N. PARKER. Empire Forestry Journal, 11, No. 1. (April, 1923, p. 34). Forest policy in India dates from 1855. The work of the Forest Department is described, and its difficulties discussed. In all cutting operations, particular attention is paid to the regeneration of valuable species. In some cases this is brought out by the method of cutting adopted; in others, planting must be resorted to as in the case of teak where plantations require tending and periodical thinnings for 30 or 40 years. Wastage in woods operations was heavy in the past, but is now largely overcome. Progress has also been made toward the utilization of subsidiary or less valuable species, thus making for a better representation of teak, sal or deodar, as the case may be in the future forest. A research Institute is maintained at Dehra Dun, for investigations in silviculture and in forest products. Plant for paper making on a commercial scale is being erected at Dehra Dun, for tests with bamboo and grass. A creosoting plant and modern dry kilns are also in process of erection. A large amount of timber testing has been done, to determine uses for the many species of timber.-C.L.

THE WAGES OF CARELESSNESS

I am one of the many employees who are fortunate enough to own an automobile. I have questioned the word "fortunate" because it hinges on how I drive, and again, on how fast the other fellow wishes to pass me.

The other evening, while going home from work, I was driving easy (of course they all say that, but I really was) when, without even a toot of the horn, a car whizzed by. The next moment I heard the grind of brakes, sounds of breaking glass, and a loud scream. I saw the car skid as it attempted to stop instantaneously. (Right there I proved the assertion I made of driving "easy," for, if I hadn't my car would be lying in the ditch — and I, in all probability would have completed a double funeral).

Upon alighting, I found a small boy — one of those chubby, freckle faced youngsters — lying in the road — just about conscious, and that's all —with blood streaming from an ugly gash on his head, and with a broken arm, to say nothing of a twisted ankle and various bruises. A bent mass of frame-work and spokes told mutely of the remains of a good "bike". The little fellow, who had just as much right on the highway as any motor car, had evidently been riding absolutely within the law, on his right side of the road. But the "speedhound" who dashed past my bus didn't reckon with that, and the consequence was a head-on collision.

Oh, the pity of it! The folly of always trying to pass the car ahead! Had the driver sounded his horn, he might have avoided maiming someone's precious boy, a buckled car, a big bill — somebody has to pay for damages, and, most important of all, severe pain, and a mother's sorrow.

It might have been your boy, or mine. It was someone's boy, and all that trouble because "Safety First" was the last consideration that counted. Why is it that in every hundred automobile accidents, records show that seventy-three per cent are avoidable? Don't let us get hardened to safety. It is not a byword to look at, and then promptly forget. I cannot think of another word in our language which means so much. Lives, money, material, health, prosperity, and everything we have, or should possess, are contingent on that one little word.

Walking, driving, working, playing, let's remember Safety First!

(Courtesy, The Kodak Magazine)

SOLD TIMBER LIMITS

18 square miles of timber limits at Rawdon, Que., placed on sale by the W. H. Miner Lumber Company. There was a large attendance of lumber men, and for a time the bidding was spirited, although no one seemed anxious to run the price up. Eventually the limits were secured by R. Quinn and Company Registered, of Windsor, Que., for $15,150, which was considered a fairly low price for so extensive a property.

WHY NOT USE OUR OWN TIMBER?

The United States exported 2,374,000 feet of southern yellow pine lumber to Canada during April, according to figures issued by the Department of Trade and Commerce. The amount of oak lumber shipped to the Dominion totalled 4,233,000 feet. Great Britain headed the countries importing the latter grade of lumber with 7,633,000 feet. Canada came second.

UNITED STATES NOTES

According to the research department of the National Lumber Manufacturers' Association, the Indians of the United States own, individually and tribally, about 7,000,000 acres of forests of commercial importance. The principal Indian forests, whose combined area covers an extent equal to Massachusetts and Connecticut, are situated in Oregon, Washington, Arizona, New Mexico, Wisconsin, California, Idaho and Minnesota. These forests contain 35,000,000,000 feet of merchantable timber worth about \$1,000,000. They are under the supervision of the Indian Forest Service of the United States Interior Department, which recently sold great quantities of timber from the preserves. All the Indian tribal forests standing on non-agricultural land are administered by the Indian Forest Service on the principle of continuous lumbering and preservation of the forests as a whole. Only the mature trees are cut, and the young growth is carefully protected during logging operations and from fires.

A new paper distributing company styled the Culbertson Paper Company is being organized by Dwight Culbertson, former manager of the New York branch of the Allied Paper Mills of Kalamazoo, Mich. The new concern will operate in Cincinnati and will deal only in high grade papers used for advertising purposes, including writing, cover and text.

Finch, Pruyn and Co., Inc., Glens Falls, N. Y. have installed in their mill the new proportioning and metering system of the Trimbley Machine Company, making it possible to shut down three jordans and four beaters, economizing on power and labor and insuring more uniform paper. One beater is used to break up the laps of pulp, but the mixing and proportioning is done by the Trimbley system.

The Interstate Commerce Commission last Thursday dismissed the complaint of the Tidewater Paper Mills Company, of New York City, against the New York Central and Bush Terminal Railroad Companies, which alleged that the present rates on wood pulp in carloads from points in Ontario and Quebec, Canada, to New York are unreasonable.

The New York State Forestry Association announces that more than half of the forest fires in 1922 in New York State were caused by smokers, hunters, fishermen and campers. One hundred and ninety-six fires were directly traceable to smokers alone. The laxity of hunters and fishermen were chiefly in the form of carelessess in burning rubbish or the pernicious habit of leaving a camp fire before it is actually dead, or without taking the precaution to cover it deep enough for safety. The Forestry Association has discovered a way to remind the wood wanderers of the fire danger by distributing paper lunch bags containing in bold type an effective fire notice. Usefulness is combined with suggestion, and the association reports that many hitherto careless smokers and campers have enrolled themselves as agents of prevention because of the appeal.

Manager W. P. Lass of the Speel River plant of the Alaska Pulp and Paper Company reports that the mill is running to capacity and has three shifts working. The output has been boosted to 40 tons of pulp daily. Six hundred tons are stored on the docks at the plant awaiting shipment to southern mills. Mr. Lass paid a visit to Juneau to arrange for transportation for this stock. "We have plenty of power, lots of logs, and men enough to keep grinding continuously," Mr. Lass was quoted as saying in Juneau. "All we want now is to have the transportation companies keep our docks clear." An Admiral Line freighter will call at Speel River southbound and take on a cargo of the pulp now on hand.

The Forest Mills at Yarmouth,Me., a subsidiary of the S. D. Warren Company, was forced to shut down its plant last Saturday due to a slump in the fiber pulp market. About 200 mill operatives were thrown out of work for an indefinite period.

The Marathon Paper Mills Company, Rothschild, Wis., has purchased from the Longyear estate at Marquette a large tract of timber land, paying \$423,302 for the property. The tract is situated east of Wakefield.

Wm. L. Nixon, formerly production manager of the Chemical Paper Manufacturing Co., and Leon M. Yoerg, until recently with the Carew Manufacturing Company, South Hadley Falls., have assumed their new duties in the plant of the American Writing Paper Company, Holyoke, Mass. The former is in charge of production in the coarse paper mills, and Mr. Yoerg is manager of production in the fine writing paper mills.

W. Goodrick Jones, president of the Texas State Forestry Association, in a recent appeal to the legislature of that State for reforestation appropriations, declared that Texas is threatened with a total loss of its forests. A generation ago Texas had 12,000,000 acres of vigin pine. To-day there are left only 1,500,000 acres of this timber uncut. By 1933, according to Mr. Jones, at the present rate of deforestation there will not be enough pine left to keep lumber producing concerns running. The great mills will be forced to shut down. In ten years, or less, senseless waste, fires and, above all, cutting without planting, will have done their work to a finish. Mr. Jones asks the Lone tar Legislature for \$100,000 to be spent in the purchase of large tracts of the cut over acres now lying idle and unproductive. With this land reforested, foresters say that within from twenty-five to forty years the new forests created will pay the State 200 per cent. on its investment.

The work of the Woodlands Section of the American Paper and Pulp Association is covered in a booklet just published by this organization. It gives the proceedings of the third annual meeting of the section and details the important work which is being done. The report of O. M. Porter, secretary, shows that a great many activities are under way to fulfill in as large measure as possible the purposes of the Woodlands Section.

1300 PAGE CATALOG

The Westinghouse Electric & Manufacturing Co., have an exceedingly complete catalogue of electrical supplies, and other equipment furnished by this Company. The very fact that it contains over 1,300 pages is an indication of its completeness, and persons familiar with the character of materials turned out by the Westinghouse Department of Publicity will be assured of its high quality. Each section is marked by a cut in thumb space.

The Markets

CANADIAN TRADE CONDITIONS

Montreal, July 3. Business in the Montreal district has picked up slightly, although some jobbers would be disinclined to agree with this statement. The position, on the whole, is good and there is no reason for pessimism. Trade generally is on a sound basis, the outlook being for an improvement rather than otherwise.

The withdrawal of prices by some paper mills has been criticized as likely to affect adversely the sale of Canadian products, the assumption being that the withdrawal is preliminary to higher prices. The mills affected, however, have no doubt considered the question from all angles. The rising costs have forced readjustment, so that the commodities will give a reasonable return on the invested capital.

Imports of paper into Canada during May totalled $785,529 as compared with $734,065 in the corresponding month of 1922. The imports of cardboard and other paperboard did not show material alteration, increase in some lines being offset by decreases in others. There was a substantial decline in vegetable parchment paper, while wrapping papers increased by $10,000. Hangings or wall papers were up by about the same amount, roofing and building papers were slightly lower, toilets and towels in sheets were down $8,000 and other papers $16,000 lower. In paper goods, boxes or containers increased $36,000, while other manufactures not otherwise particularized jumped from $185,000 to $217,000.

The imports of British papers show a tendency to advance. During the first four months of this year 123,168 pounds of bonds, writings and ledgers were sent to Canada and in the same period we imported 281,155 pounds of book papers. The Old Country is competing for certain lines at prices which in some instances are below Canadian quotations.

The newsprint market is firm. The demand naturally declines during the summer months, and although the Canadian mills are still running full time, there is not that urgent call for paper which characterized the market in previous months. The production of the mills which recently came into operation has been readily absorbed. The Bathurst Company will soon be turning out paper, this adding to the increasing number of Canadian mills.

Other lines are pretty steady. The mills are securing satisfactory orders in writings, books and ledgers. The wrapping section is moderately busy, and there is a fair amount of trade in lightweight papers.

In the pulp section, some mills are oversold for groundwood. There is no surplus, while the demand is good. Should the prohibition of pulpwood export materialize, it is likely that the call for Canadian groundwood would substantially increase, with a consequent advance in values. Kraft is firm, with good orders to hand. Bleached sulphite keeps its price, although there is a tendency for buying to slacken slightly, which is the usual procedure during the summer season. A cable received in Montreal states that the strike in Norway is general, except for the iron and steel and building trades.

The price of pulpwood is around $20.50 per cord, delivered, dealers expressing the opinion that it may go higher on the ground that the supply is not excessive. American buyers of course look at the position from a different point, although this may be soon altered if the power to prohibit the export of pulp-wood is put into force by the Government. In connection with this subject, it should be remarked that the Federal Government has definitely stated that if the export is prohibited an exemption will be made of such wood as is grown by farmers or settlers on their own property. This no doubt would be regulated by a licensing system.

Ontario Market News

The month of June closed with a somewhat improved condition in the Ontario paper trade which had been somewhat stagnant since the month opened. There was a disposition in some quarters to ascribe to the Provincial election campaign, and its attendant dislocation of trade, the responsibility for a few weeks of light buying of paper, but now that the political stage is cleared and the effects of the first stage of the holiday season are over, business in the pulp and paper trade is expected to regain something like its old stride. With most of the jobbers in Toronto and district the latter part of the month produced good business, though. Generally speaking, June was a quiet month and the effects of a curtailment of orders were felt not only by the jobbers well. The book paper trade, however, has kept up but by the manufacturers of some lines of papers as well and there has been no slackening off in production or sale in this line, although there has been a rather light call for bonds, writings and ledgers. The wrapping paper trade appears to be coming back again after some weeks of slow selling and the same may be said of the tissue and toilet paper trade which was quiet during the greater part of June. Mills manufacturing the lines just noted are quite busy now and are having no difficulty in disposing of their output. Specialty tissue lines, such as towels, napkins etc., are having a good call now that the picnic season is on. Manufacturing stationers are only fairly busy, but they are using considerable paper, while envelope manufacturers for the most part are enjoying good business. There have been no price changes in any paper department during the week despite the fact that there have been withdrawals of price lists by several paper manufacturers. These lists have not yet been replaced by new quotations and when they are it is not anticipated that there will be any drastic changes. It is possible that there may be a slight increase in a few lines in keeping with the general upward tendency but for the most part the mills are simply making a few adjustments in their lists, while at the same time intimating that there is not likely to be any price recession.

PULP.— From what can be learned the pulp market continues to show an easing off tendency. No large stocks are being sold by the manufacturers and the paper mills appear to be buying cautiously. Neither does it appear that the pulp mills have accumulated stocks of any great size. In buying cautiously the paper makers have in mind the possible further drop in pulp which some of the paper makers predict may come. Groundwood is selling around the $40 mark now and can be bought at slightly less than this figure while bleached sulphite is generally quoted at around $90.00 and up, with unbleached sulphite at from $65.00 to $75.00, the former price being for news grade.

NEW YORK MARKETS

New York, June 30. — (Special Correspondence) — Developments of an important nature have been lacking in the paper markets this week. Business in paper of most kinds is of very seasonable character at present; there is a fairly steady demand of routine dimensions from various consuming quarters, but buyers are proceeding in a careful way and are seldom ordering other than supplies needed for direct use. The market is far from inactive, however. Paper mills, taken as a whole, are doubtless busier than they ordinarily are at this time of the year. Reports from the Middle West regarding mill operations in that part of the U. S. are especially encouraging, telling as they do of a large majority of plants running at a very satisfactory rate of capacity and of having a good volume of unfilled orders on file. Mills in the New England district are comparatively active though probably not as much so as those in the West.

Prices of paper rule steady. Practically no changes of any kind have been reported this week. Manufacturers unable to secure enough orders to absorb their full output are wisely curtailing production and maintaining prices — there are several reasons completely justifying this policy. Raw materials in the long run are but slightly cheaper today than they were several months ago; there has been some reaction in prices of rags, waste paper and similar materials, but pulp, chemicals, coal and other materials are just as high as at anytime this year thus far; labor also is costly and scarce, particularly unskilled labor, and the other costs of paper manufacturers in marketing their product are as high at present as ever before, so that there seems every justification for prevailing prices especially since current paper prices are, if anything, below a proportionate level of other manufactured commodities based on pre-war averages.

That activity in the print paper industry is going on at a consistently good rate is indicated by the Federal Trade Commission's report covering the month of May which shows a big increase in production of newsprint over the proceding month. Domestic production of total newsprint in May amounted to 138,868 net tons, compared with 116,719 net tons in April — a gain of more than 22,000 tons — and also comparing with 129,950 tons produced in May a year ago, 78,868 tons in May two years ago, 129,230 tons in May three years ago, and 105,819 tons four years ago.

Of the 138,868 net tons of total newsprint produced in May, 1923, 126,215 net tons were standard news, which output was more than 17,000 net tons in excess of the 107,023 net tons produced in April this year, and contrasted with 120,654 net tons of standard news produced in May last year, 73,181 tons in May, 1921; 119,906 tons in May, 1920, and 96,192 tons in May, 1919.

Production of total newsprint in the United States during the first five months of this year exceeded that of the same time of any year in the past with the lone exception of 1920 and was very close to a parity with the output in that year. Production of total newsprint from January to May, inclusive, this year was 626,944 net tons, against 562,912 tons in the corresponding period last year, 528,678 tons in 1921, 629,244 tons in 1920, 556,245 tons in 1919, and 527,626 tons in 1918.

Quotations on box board have evinced a firmer tone this week after having inclined downward for a time. Most manufacturers in the East have insisted on a price of $60 a ton on news board and at least $57.50 on plain chip f. o. b. New York, and some have quoted $60 on chip and proportionately higher on news. The time is drawing near when the usual buying movement in board starts, and indications are that board prices have touched bottom for a while,especially since raw material in the form of old paper scrap is exhibiting a stiffening price tendency following a steady decline of several months' duration. Current buying of board is spotty but in the aggregate the tonnage moving is fully up to normal for this season, if not a little better.

Book papers are quotably steady and manufacturers keep moderately busy though chiefly on contract business. Coarse papers are in routine demand at maintained prices, with wrappings leading the way as tissue paper is in less call. Fine papers are holding their own both in point of price and in point of volume of movement.

GROUND WOOD.— There is nothing better than a routine demand for ground wood to be reported. Consumers are buying mechanical pulp in a limited manner, seldom ordering other than in tonnage immediately and actually needed, and while there is a fairly good contract movement and considerable spot market activity, it is quite apparent that current production is in excess of the wants of consumers. However, this is the period when grinders endeavor to store up a supply of ground wood to tide them over the usual dry spell later in the summer and not much selling pressure is being exerted on the market. Producers are stocking any surplus pulp they are making and are maintaining quotations fairly firmly at about $35 a ton at grinding plants for prime spruce ground wood, freshly ground, for prompt shipment; prices, of course, depending in large measure on the distance between producing and consuming points and the freights involved. There are reports of purchases at below $35 and it is likely some pulp has been bought at the cheaper prices, but indications are the bulk of business transpiring is at a basis of at least $35 f. o. b. pulp mills.

CHEMICAL PULP.— Demand for chemical wood pulp continues slow. There is some spotty buying but papermakers with few exceptions are absorbing supplies in limited amounts and seem definitely opposed to ordering other than pulp for which they have immediate need. Moreover, a majority of paper mills appear to have their present requirements sufficiently well covered to permit them to remain out of the market as buyers excepting in an occasional way. Prices are quotably maintained and sentiment among those on the selling side of the trade is that higher market levels will be reached later in the year, but, on the other hand, as is usually the case under circumstances such as now exist, there are some importers and producers who are shading asked prices today to secure orders.

So far as is known, the strike in the pulp and paper mills of Norway continues. The only cable advices received in New York this week were to the effect that negotiations were under way seeking to settle the labor disturbance in the lumber industry of that country, which led to a sympathetic strike by the pulp and paper mill workers, but it is understood that the Norwegian mills are still closed.

Importations of chemical pulp into the United States are on the decline, according to the latest figures issued by the Government. In April, for example, imports of were almost 12,000 tons below the 82,078 tons imported in March, and more than 27,000 tons less than was imported in February, when a total of 97,589 tons was received.

RAGS.— The feature in papermaking rags is a little stiffening of prices on the low grades, particularly those consumed by felt paper mills. This seems to be important if for no other reason than that it denotes a turn in the market after a decline which was uninterrupted for a period of several months. Felt paper mills in the East have freely paid 1.10 cents a pound f. o. b. New York this week for No. 2 roofing stock, while last week they bought as low as one cent a pound, recording a rise of $2 per ton. No. 1 roofing stock is relatively stronger in price, owing to the scarcity of such rags, and mills are paying 1.30 to 1.35 cents a pound New York.

New cuttings are in slack demand. Writing paper manufacturers seem to be well supplied for the present and are merely nibbling as buyers, and they are frequently securing the rags wanted at price concessions. Similarly, old whites and blues are in limited call. Dealers are endeavoring to hold up quoted prices but at the same time they are mostly accepting orders at reductions from the rates asked. Prices on many grades of rags are on levels where dealers claim there is little profit in collecting and sorting them, and it is asserted that stocks are therefore decreasing instead of increasing in spite of the light movement to mills.

PAPER STOCK.— Prices of old paper have steadied to a pronounced degree. Thus far no actual advances have been noted but the decline seems to have been definitely checked, and the tendency of values in at least certain cases is upward. Low grades are particularly firm. Flat folded newspapers are bringing 80 cents a hundred pounds f. o. b. New York, and No. 1 mixed paper 70 cents, and in some instances dealers quote a little beyond these figures. Shavings are holding steady at close to 4.25 cents a pound New York for No. 1 hard white, and 3.25 cents for No. 1 soft white shavings, while old kraft paper is firmly quoted by New York dealers at a minimum of 2 cents for strictly No. 1 packing f. o. b. this city. Old book stock continues quiet and quotations generally range around 1.65 cents a pound for heavy No. 1 magazines, and 1.40 cents for mixed books. Manilas and ledgers are at about last reported price levels.

OLD ROPE AND BAGGING.— Demand for old rope from paper mills is still of limited scope with the chief buying agency almost entirely out of the market. No. 1 domestic manila rope is fetching between 5.75 and 6 cents a pound f. o. b. New York and the probabilities are some mills have succeeded in purchasing a little under these figures. Old bagging also is exceedingly quiet. Not many papermakers are buying, and No. 1 scrap burlap is readily available at 1.15 to 1.25 cents a pound at shipping points, and roofing bagging at 85 cents a hundred pounds.

The London, *Times* and *Daily Telegraph* (Viscount Burnham's paper), will be sold this week at 4 cents each. Twelve months ago the price was reduced to 3 cents. They say that newsprint is more than double the 1914 price.

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PULP MILL GROWTH AFFECTS LUMBER

The expansion of the pulp and paper industry is having a marked influence on the lumber trade. In Eastern Canada companies which formerly manufactured considerable quantities of lumber have either ceased to engage in that branch of trade or have reduced their output, because of the great demand for pulpwood. These concerns find it more to their interest to use the timber as pulpwood than to convert it into sawn lumber.

In the West, the rise of the pulp and paper industry is also affecting the lumber business. The Prince George Lumber Manufacturers' Association, which includes nearly all mills operating along the lines of the Grand Trunk Pacific, has petitioned the British Columbia Government to revise the pulp reserve areas recently established by that Government with a view of fostering the pulp and paper industry. The Associated states that it is not antagonistic to that industry, but the members contend that the lumber resources of the Prince George district are of sufficient extent to permit a considerable development of lumbering without jeopardizing the pulp branch if a proper revision is made of the pulp reserve areas. It is claimed that the lines of those areas encroach too much upon the timber which, in the economic management of the forest, should be left available for the mills. If these areas are maintained, it will mean that inside three or four years the lumber mills will be forced to close because of lack of commercially available lumber, or that the mills will have to be moved to other points.

CHIEF FORESTER COMPLAINS OF SETTLER'S APATHY

While there is much to be thankful for in the improvement with regard to forest fires because of recent rains, the situation will be serious for another three or four months. This is emphasized in the following bulletin concerning forest fires which was issued by Gustave Piche, Chief Forester for Quebec.

''As a result of the wave of heat going through the province in the last few days, and the strong winds which are reported everywhere, the fires have started over again in several sections, so that the situation is far from good and more losses are reported this afternoon. The fire fighters are still fighting without rest. All those employed by the Government or by the protective associations are working energetically to extinguish the fires, but, unfortunately, they are not always helped by those who should co-operate. A number of settlers, instead of trying to control small fires starting on their land, advised the forest rangers and do not give much help themselves. This is one of the reasons which prevents the control of fires from being effective in many instances. It may also be added that some of the limit holders take no interest whatever in protecting their limits, and are quite surprised when they are advised that part of their reserve has been burned down. It is very important to keep the people well aware that the conditions have not by any means improved, and everyone must help to save the forests.''

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OF CANADA

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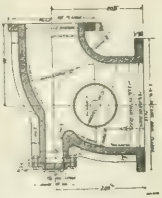

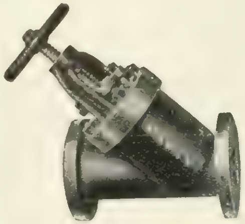

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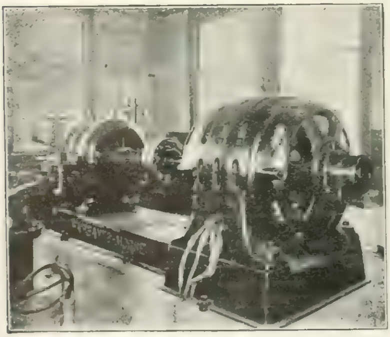

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:-: EDITORIAL :-:

DEPENDING ON MINES

Our text for a little editorial comment is found in the following item with the above title which appeared last week in the "Toronto Globe." As this may represent the attitude of a number of people, it is possible that an entirely incorrect impression of Canada's resources will be spread abroad. The item reads as follows:

> A reader who styles himself exceedingly hopeful for the mining output in Northern Ontario, and without prejudice in a certain controversial situation, points out that those who maintain that Northern Ontario is not likely to be an important source of coal forget that a certain school of geology used to say that the great pre-Cambrian shield south of Hudson Bay would not be a source for gold or silver. Those critics now have their answer in the enormous production of the Porcupine, Cobalt, Kirkland Lake, Sudbury and other camps. Even now a very small percentage of this great area has even been prospected. It was pointed out that President C. V. Corless, in his address to the Canadian Institute of Mining and Metallurgy in 1922, said that few people realized that not more than 15 per cent. of the entire surface of Canada is suitable for profitable cultivation as farm land. Hence the necessity for prosecuting the search for minerals in the most aggressive manner.

It is evident that the writer of this item picked out a stray sentence somewhere and applied it to the general report on the geological condition of the north country, overlooking the fact that the pre-Cambrian area was thus evidently confused with occasional patches of Laurentian formation, which are known to be generally barren of valuable minerals. As a matter of fact, the earlier reports of the geological surveys were wonderfully complete and did serve to indicate the possibilities of ore bearing districts that have since been developed into enormously valuable properties that have contributed in great measure to the prosperity of this Dominion. The fact someone's suggestion of the improbability of the discovery of valuable minerals on account of the presence of the granite gneiss of the Laurentian formation was followed by very important discoveries in the true pre-Cambrian formation is certainly no excuse or reason for the silly intimation that one might expect to find coal in these same areas.

The author of this item also incompletely quotes Dr. Corless with regard to his notable statement as to the vast extent of mineral areas underlying Canada's surface. Even a casual study of the map of the Dominion will confirm the statement of Dr. Corless that approximately 15 per cent of Canada's area is primarily adaptable for agricultural purposes. This, however, by no means should leave the impression that the other 85 per cent. of Canada's area is solely and unalterably suitable for mining developments, and not suitable for the cultivation of other crops supported by the soil above the underlying mineral wealth. A mine has no objections to extending its veins under a lake or the ocean, nor to having a forest or a farm flourish above its storehouse of metal.

The fact of the matter is that there are wonderfully rich valleys and basins where the soil is particularly adapted to agricultural development and should form the basis of a prosperous farming community that would furnish the mining community with its needs of vegetables, grain and fruit, as well as dairy products. The vast remaining area, however, of the ground overlying the mineral deposit of the Dominion is primarily and to a large extent solely suitable to the growth of trees, and there is no reason on earth why the development of the mines and the forests should not go on hand in hand to the enrichment of our Dominion and the prosperity of our people. Many of the problems of the prospector and miner are shared by the lumberman and pulp manufacturer. The prosperity of one industry is reflected in the purchasing power of the other, and both contribute to the welfare of the general public, as the needs of the miner and the lumberman must naturally be provided by the manufacturer of machinery, clothing, etc., and the merchant and transportation industry. By all means let the mineral wealth of Canada be discovered, but by no means let the Government nor the people forget that everybody cannot work in the mines; timber is needed for houses, paper is needed for our everyday uses, and agricultural development is necessary to furnish us with food. It would be incorrect to say that anyone of these national activities is more important than another, because they are all interdependent. It is absolutely necessary, however, that in order to maintain our national prosperity, we must protect the forests and replace those that we are cutting down and burning up, with new ones for use in the near future. The great question and problem is whether we have sufficient standing timber now to keep our industries going until the replaced and replanted areas will come to maturity.

EMPIRE STATESMEN IN CONFERENCE

The Imperial Conference has been called for the 1st October next in London, and the Imperial Economic Conference will meet there at the same time. The need for personal touch and consultation between the heads of the various self-governing Dominions and the representatives of India has recently been growing more urgent. Questions have emerged during the past few months which, perhaps, can only be satisfactorily settled at a Conference of the Empire's statesmen. For example, the signature of the recent treaty with the United States by Canada's own representative alone and not in association with a representative of Great Britain has been regarded, whether rightly or otherwise, as opening up constitutional issues of some magnitude, as to which different interpretations obtain in different parts of the Empire. The forthcoming Conference should do something to clear the air on this as on some other matters.

There are other constitutional problems looming up on the horizon, and it is possible that, in their case also, the forthcoming Conference may make a substantial contribution to their solution. But we confess that, for our part, we regard the questions that must come before the Economic Conference as being second in importance to none. As a result of the war, Great Britain is confronted by an industrial, commercial and financial situation of a far from reassuring kind. In order to obtain the wherewithal to discharge her debt obligations to the United States and also to keep her present population so employed as to support them on a reasonable standard of living, it is imperative for her — to a degree that it has never been before — to find an outlet for her manufactured products. Where is she to find this outlet? That is a question that must come before the forthcoming Economic Conference in a vitally urgent form. For with it is interwoven the question of Great Britain's commercial future and even of her political future as the source and centre of the Empire. For the latter is, and must necessarily be, dependent on the former and on her ability to support her population.

It must be remembered that, of Great Britain's export trade just prior to the war, something like two fifths went to European countries, and of this Germany absorbed about a quarter. Revival of her trade with Germany is unattainable until the reparations question is settled. Indeed, revival of her European trade at large, on any scale commensurate with her necessities, is almost out of the question until foreign budgets are balanced and foreign currencies stabilized. It is obvious that, as things are at present, Russia must be disregarded from the standpoint of British trade, while, in any case, Germany is more advantageously situated than Great Britain for profiting by any trade openings that may offer in that country. Outside Europe, Japan is both increasing her exports to China at the expense of Great Britain and also taking a leading part in the development of Chinese natural resources. On this continent, the United States tariff must serve increasingly to exclude from the markets of that country even such manufactured products as Great Britain can still produce in competition with American industry. As far as Central and South America are concerned, the United States is now largely in possession of that market as a result of the war which shut off British exports therefrom.

This being so, Great Britain must look for her markets within the Empire. Most of her raw materials and foodstuffs can be supplied within that Empire's wide bounds, and, in view of her war debt to the United States and that country's tariff barrier against exports from other lands, it is to her undoubted interest to draw her supplies from the British Dominions. In India and in Africa, in particular, there are great potentialities for British trade. And, as regards the other British Dominions, while, it is true, each, possessed, as it is, of complete tariff autonomy, is naturally striving to develop its own manufacturing industries, yet each also is under the necessity of importing products from outside its borders. In such circumstances, it should not be beyond the competency of Empire statesmanship to devise some well-considered plan whereby inter-Imperial trade may be fostered and developed. So far as Canada is concerned, apart from any high Imperial grounds, there is every reason why we should restrict our purchases from other countries and buy instead from Great Britain — a customer that buys so much from us in the present and is sure to buy increasingly from us in the future.

It is because the subject of closer Empire trade is bound to be canvassed at the forthcoming Economic Conference with unprecedented concentration that we attach such importance to the meeting of that body next October. The objective at which we should aim is for every Empire citizen to purchase Empire-made goods. The manner of attaining that objective need not be discussed here and now. But the urgency of Great Britain's economic situation will doubtless be made fully apparent at the deliberations next October.

PAPER HORSESHOES IN GERMANY

Horseshoes of paper have been produced in Germany. The paper is treated with oil of turpentine, which makes it tough, strong and waterproof.

The sheets are pasted together with a special preparation, then the shoes are cut out in proper form, subjected to enormous pressure, trimmed and shaped with files.

It is asserted that the paper horseshoe offers a better resistance to wear than one of iron.

Paper Box Makers Optimistic

The paper box industry was under review at an enthusiastic convention of the Canadian Paper Box Manufacturers' Association at the Hotel Clifton, Niagara Falls, Ont., June 25-26, the gathering being the eighth annual reunion of the members of the organization. Paper box makers from most parts of Canada gathered and in a two-day session listened to many papers on subjects of interest to the trade and formulated plans in various departments of the industry for the coming year. There was a general tone of optimism to the proceedings which indicated wide faith in the future of an industry that has developed greatly in Canada during the past few years and the discussions at the various sessions indicated a feeling of close co-operation among the manufacturers and with their kinsfolk, the paper and board manufacturers. The President, C. Winter Brown, of New Brunswick, struck an optimistic note in his annual address when he intimated that the slogan ''Advance'' had been lived up to and would continue to inspire the industry during the coming year. He intimated that with a good crop this year Canada's already improving business outlook would reach still more satisfactory proportions by the Fall. A similar optimistic view was taken by the new president, J. B. Lawrason, of Lawrason & Doughty, Toronto, who takes the helm this year under good auspices. Mr. Lawrason is one of the most popular men in the trade and his faith in the future of the industry is indicated by the fact that his firm are about to move into a new factory they have recently erected in Toronto. The Vice-President is George Hancock, of the Galt Paper Box Company, while the following will compose the directorate for the coming year: Bart Sproule, Toronto; J. L. Constantineau, Montreal; L. J. Adjutor Amyot, Quebec; C. Winter Brown, Coldbrook, N.B. Ottawa was selected as the next place of meeting, to be held on the first two days of the last week in June, 1924.

The much discussed Sales Tax of the Dominion Government came in for some attention when a resolution was adopted authorizing the secretary to write the Minister of Finance suggesting that it be legally compulsory that the final source which pays the tax to the Government, charge the whole of such tax to the consumer, as a separate charge on the invoice, and that it be legally compulsory for such customer to pay the whole of said charge.

The result of considerable research and work by F. W. Fisher, of Toronto, along the line of accident prevention, was shown in the recommendations in his report that a number of safe-guards which he specified be adopted. The Ontario Government will be asked to bring these into compulsory force in an effort to afford every possible means of protection to the workers in the box making factories. Mr. Fisher's report strongly recommended the equipment of every platen press with the device recently invented by Robert Goldie, of the Rudd Paper Box Company, Toronto.

At the request of David F. Robertson, of the Canadian Paper Board Company, Limited, a committee was appointed to meet the board mills at an early date in respect to classification of board and weight according to the number of points. The following compose the committee selected:

H. D. McDermid, Somerville Paper Boxes, Ltd., London, Ont.; E. Newell or O. A. Hutchison, Dominion Envelop and Cartons, Limited, Toronto; R. S. Dunlop, Dominion Paper Box Co., Ltd., Toronto and J. L. Constantineau, King Paper Box Company, Montreal.

James Northey, of the Telfer Paper Box Company, Limited, Toronto, and A. L. Lewis, of the Southam Press, addressed the gathering on the subject of the ''Marking Act'', and Mr. Northey was appointed the Association's representative to act in conjunction with the Toronto Typothetae on the subject.

According to the secretary's report the total number of active members on the roll is 44 as against 45 at the time of last years' convention, with 42 associate members. Although board, in which the paper box manufacturer is so vitally interested, had within the past twelve months advanced very considerably in price and remains firm, said the secretary, yet taking commodities as a whole in Canada, prices have remained about staple during the year.

Among the papers read and addresses delivered were the following: ''Competitors, Yet Partners,'' by Charles V. Syrett, Victoria Paper and Twine Company, Limited, Toronto; ''Stimulating the demand for the Paper Package'', by L. P. Morrison, of the Automatic Paper Box Co., Toronto; ''Reducing the Cost of Accidents'', by F. W. Fisher, of F. W. Fisher Co., Ltd., Toronto; ''Training to Make Quality Boxes'', by George O. Slingerland of Mechanicsville, N.Y.; Director of National Paper Box Manufacturers' Association of the United States; ''Competition in Montreal,'' by J. L. Constantineau of Montreal; ''The Outlook for Canada'', by Canon Cody of Toronto; ''Sanity and Poise in Competition'', by D. H. McDermid of the Somerville Paper Boxes, Limited, London; paper on and demonstration of ''A Man's Shoe Box,'' by F. R. McGrew, of Ernst & Ernst.

OPENING ADDRESS

By Mr. C. WINTER BROWN, Coldbrook, N.B.,
President Canadian Paper Box Manufacturers' Association

It is a great pleasure to have the honor of presiding over this your eighth convention and having the privilege of welcoming our large and steadily growing associate membership. There are yet a number of Paper Box manufacturers that are not in our ranks, which we should endeavor to enroll so that they might share with us the benefits of the Association.

Reviewing the past, I well remember our organizing meeting in Toronto where we were brought together by our efficient Secretary, Mr. Frame, and our first president, Mr. McDermid. We realized from this time onward what convention really meant — a gathering of Paper Box manufacturers, who have made from year to year a continuous advance, helping not only themselves, but their customers as well. How could we help living up to our slogan ''Advance'' with such able men as Messrs. Harries, Bennett, Reid, Moisan, for our leaders?

Through our meetings we have become better acquainted with the ways and methods of the Board Mills, who sell us our principal raw material, and who have worked with us for our mutual benefit.

We are just now profiting by the Marking Act, where goods manufactured in foreign countries have to be marked where they are manufactured. This is something that our Association took up this year in earnest and they have succeeded in having same retained on the statute books, otherwise it would probably have been repealed.

On looking over the programme for today and tomorrow, we have papers on various subjects. Such papers have been given to us at past conventions and have greatly benefited us in our business, so I hope that as in the past we shall try to put into practice many of the new suggestions that will be thrown out by the speakers.

Those of us who are not in the Toronto Carton Club feel that we have been benefited also by their papers, which have been copied and passed on to us from time to time.

You will all, I believe, agree with me that it has been a help to our industry to have been organized during the war and since its close we have come through the trade depression with practically no failures in our industry.

Every year brings with it problems to be discussed. Costs seem to be ever in the foreground these days. Costs are continually changing. The war has brought with it the new war tax, which has to be reckoned in with our cost of production. We have now the tax of 6 per cent. instead of the tax of 4½ per cent. and 2¼ per cent to deal with, and I hope that the speaker on this important subject will have something to say along this line. I understand that the Government Officials are expecting to have their troubles finding out how the new law will really work out.

For everybody's hour I trust every member has something to bring up. Your problems are those of the other members and you may be able to get some help or enlightenment on your particular subject. In any case let this hour be filled up with profitable discussions.

You have no doubt read with some concern of the large numbers of our young people, who have been leaving this country to cross the border to the neighboring Republic, I might say they have been leaving the Maritime Provinces in very large numbers. In fact, it looks like a calamity to see the flower of our population leaving one of the most beautiful sections of Canada to make their homes in the United States. What is the reason? May it not be to some extent the high freight rates now prevailing? Many of our industries have had their production cut down on account of lost markets. This heavy loss of population still makes it harder for our industries which depend on local trade for their products.

I mentioned a moment ago that we as an industry have come through the trade depression of the last couple of years with practically no failures, which shows or proves to my mind at least, that we as a whole have been watching our costs, and knowing same, have not been selling our product at less than cost as we have more or less been guilty of in the past. Again I say, thanks to this Association for its educational efforts along this line.

We are giving our time and money to attend this Convention and I trust we shall go back to our offices with new inspirations and many thoughts that can be put into practice for the benefit of all.

Not only has our coming together been beneficial from a business standpoint, but from a social one as well. During the past Conventions we have made lifelong friends among both the active and associate members and their families. Had it not been for our Saguenay trip we might not now have our friend Morency in our ranks.

We are meeting today in one of the world's famous beauty spots and those of us who visited this place after the Hamilton Convention were so delighted with accommodations it afforded, resolved to lend our support toward meeting here at some future time and at last we have had our hopes realized. We trust our associate members will see to it that the ladies of our party visit the cave of the Winds before they leave Niagara Falls.

It is very gratifying to see by the trade reports that there is a general revival of business throughout the country and with a good crop this year, business should greatly improve in the fall.

REPORT OF SECRETARY

By Mr. S. J. Frame, Toronto

I would report that the total number of active members on the roll at present is 44 as aganist 45 at the time of the Convention a year ago. The total number of associate members at present is 42 as against 43 at the time of the Convention a year ago.

The Association accounts for the year ending May 31st, 1922, have been duly audited by Mr. W. P. Bennett, the Honorary Auditor. In the year ending May 31st, 1923, inclusive of $726.14 balance carried over from the previous year, the total receipts were $3,430.72 and the total disbursements were $1,962.26 leaving a balance on hand of $1,468.46 as of May 31st, 1923.

Since we last met a year ago, the world trade movements, apart from Central Europe, have in the main, even to some extent in Russia, been in the direction of improvement. Great Britain being dependent on world trade perhaps best reflects the improvement, for while there is still a great amount of unemployment there, yet it has become greatly reduced and the marks of improvement while gradual, are sure.

In the North American continent in which we are more directly interested, the improvement in demand has operated to a greater degree in the United States than in any other country in the world, and which has resulted in Canada losing a certain amount of workers to the United States. This though is only a repetition of a phase which has happened before in Canadian development and will run its course. It is not improbable but that, as has happened in previous years, later on the shifting of workers will become reversed in a northward instead of a southward direction.

World trade is seriously affected by the present European conditions, the yet unsolved problem of reparations having a very unsettling effect on European trade conditions. However, the problem of reparations will eventually be solved, and then improvement in Europe will follow with consequent good results to the rest of the world.

Speaking of Canadian trade conditions, although board, in which the paper box manufacturer is so vitally interested, has within the last twelve months, advanced very considerably in price, and remains firm, yet taking commodities as a whole, prices have remained about stable during the past twelve months.

Looking back over the past two and a half years and taking specially into consideration the great strain which all passed through in the year 1921, Canada has a great deal to be thankful for. While, during the past nine months or thereabouts, trade has not been as active in Canada as in the United States, and business with the retail trade on which the paper box industry is largely dependent has been retarded by the long winter and spring, yet without going to any extremes we have plodded steadily along and while a bit quiet, trade is in a healthy condition. Also, apart from the fact of prices on farm commodities being out of alignment with prices generally, fundamentally conditions in Canada are sound. In this connection, I quote as follows from Babson's report of April 24th last.

"Better Outlook for Canada"

"Many of our Canadian clients have asked if business in the Dominion will show the same improvement as in the United States. In years past Canada usually has followed the same trend as the United States, with a lag of about six to nine months. The question now, however, is whether the revival in the United States is not very largely induced by the new tariff rates, a factor which of course does not benefit Canada. To an extent this undoubtedly is true. Nevertheless, we believe that clients in Canada can safely plan on considerably better business by the latter half of this year.

"A study of the failure figures below shows that during the past six months Canadian business has been undergoing a thorough house cleaning. Commodity prices have not yet been deflated quite as much as in the United States, but the levels between the two countries may easily be adjusted within the next few months. The general trend of Canadian stock prices is upward. Hence, although the total volume of business as shown by Bank Clearings is still low, the other barometer subjects suggest that a turn for the better is not far away.

The Association, during the past year has, as usual, operated for the benefit of the industry, and thanks are due to the directors and members of committees for the willing and unselfish way in which they have worked together in the Association's behalf.

Although the past two or three years have brought about conditions approaching normality, yet the fact remains that throughout the world competition is of such severity as to call for the cultivation of efficiency of the highest standard from all houses who expect to survive.

Therefore, the foundation stones upon which the programme of this Convention has been built, "Knowledge of costs", "Wisdom in selling prices", "Stimulating the demand for the paper package" are most appropriate and the discussion arising from the subjects at the Convention pertinent to the said three phases of the business should be most helpful to all attending the Convention.

In conclusion, in the faith that Providence will again this year bless us with good crops, the Canadian Paper Box industry can look forward to the future with serene confidence.

"COMPETITORS, YET PARTNERS, IN THE INDUSTRY"

By Mr. CHARLES V. SYRETT, of Victoria Paper & Twine Co., Limited, Toronto

Really, I do not know why a subject so large and so intense as "Competitors, yet Partners, in the Industry", should have fallen to my lot. I shall not commence to make any apologies, but nevertheless I appreciate the honor done me and will do my best to do justice to the subject and not to weary you. If in parts my address border on Idealism it is because I find it difficult completely to abstain from bringing out some points that must of necessity be substantially based on sound Ideals and if it were not so my address could hardly be of an helpful nature but I must confess to you that it is far easier to be idealistic by word of mouth than by human action.

First let me say that each and all of you are to be complimented upon the progress of your Association. In just a few years you have made great headway and steadily grown to a successful organization. An association, after all, is only what you make it and those who remain outside your ranks, speaking more particularly of your active membership, miss more in the progress and educational advance of the industry than they can possibly conceive of, plus the pleasure and profit of meeting their partners, in the same industry.

The subject your Committee has asked me to speak on is very broad and has many angles. The greatest difficulty is to avoid following too closely along any particular line as time does not permit of too lengthy an address.

We all have competitors, some we claim are easy competitors, some we may dislike because they have never warmed up to us, some we dislike because we dislike their methods of doing business, perhaps some have never recognized us, perhaps we ourselves have kept aloof too, but the real fellow in our trade is the chap you love to talk with, to visit with, to exchange ideas with, to help improve conditions with, he at least, is the real competitor with Service his motto coupled with vision. This one hundred per cent exchange of genuine goodfellowship does not come because one thinks he is brighter than the other but comes from the heart and in the moulding of that heart there is a place for humanity, a place you have developed and are still developing to take in a still larger part of humanity including your competitor who has already become a partner in the same industry with you.

Some competitors, always remain plain and undisguised competitors, never partners in the same industry, this indeed is their loss and this class of competitor we should free our minds of, excepting the possession on our part, of a willingness to toe the line. Conscience directs and directs wisely and we know quite well whether we have done our part or not.

Two words describe best what I mean; two words battered to death, misconstrued and misused, used by perverters of the truth and yet two words in the English language so essential to good business. Co-operation and Service. Working conjointly with our competitor for better conditions and serving truly with a vision for the future.

Co-operation denoting unselfishness, to be useful to and considerate of others; Service to serve truly our fellowman.

How can we overlook or avoid using these words that mean so much? Have we not seen the lack of Co-operation and Service to others in our younger and earlier days of business life?

The suspicion, the independent spirit, the exaggerated idea of our own importance, the utter lack of thought for others, how these things governed our younger days of business life. Then gradually as the days and years went rolling by, we mixed more with our fellow-man and gradually began to see the benefits to be derived by the exchanging of ideas and with this more complete knowledge of our competitor we became more mellow, more helpful, more charitable in our expressions and acts and felt much better in our innermost heart for all these changes which helped to bring about better understanding.

Sometimes it is a long, long uphill climb to create and build along sound and helpful lines an Association that is to be long-lived. The first cost in effort, patience and even in expense may appear to be fruitless, tiresome and even bordering on despair but with enthusiasm and work, a sincere desire to work conjointly with our competitors in the Association, with a steady eye on the goal of "Effectual Co-Operation" the desired peak of success can be reached with all its attainments and benefits.

Then again, after this high watermark is reached in our association life we are able to look back and see how short-sighted we were, how we allowed foolish and trivial things to really hold us back from enjoying the friendship and confidence of our competitors in the same industry, and we regret to think of all the time we lost by not vigorously and enthusiastically joining hands with our competing rivals. Rudyard Kipling in his famous poem entitled "IF" says:—

If you can walk with crowds and keep your nerve.
Or walk with Kings nor lose the common touch,
If neither foes nor loving hearts can hurt you
If all men count with you but not too much,
If you can fill the unforgiving minute
With sixty seconds worth of distance run,
Yours is the Earth and all that's in it,
And what is more, you'll Be a Man, My Son.

The whole poem is an inspiration and one never tires reading it.

We should have faith in humanity, but not too much, we must not expect perfection because we were not made perfect. If we err in thinking we're perfect we are treading dangerous ground and we cannot have as much faith in our fellow man because we would be placing ourselves on a higher plane which would be disastrous. We all have weaknesses but we can build, we can progress, we can serve with a real vision and when we take advantage of all the opportunities around and about us we are truly serving and building, gaining more from life than we would from a shortsighted belief that we are better or superior to the other fellow.

Some may argue, some may think that a free interchange of ideas, be they Manufacturing — Selling — or Administrative tend to destroy or weaken the **Individuality of the Man**. This I believe to be a misconception. An odd Goliath in business may spring up but seldom is he so perfect, so efficient, that he knows "all things well" pertaining to the industry he may be engaged in; he can but learn some things from his so called competitor and I venture the opinion that in an Association such as you possess, this self same Goliath can learn a whole lot. So also, if he does possess great strength in his own business with wonderful understanding and wisdom, knowing through his wisdom, that financial gain is not the supreme end of this life, can he not give to his weaker partners, in the industry, some of that knowledge that is so vital to success. Is he not manifoldly repaid? I think he is.

Individuality to which I have referred should not be allowed to be absorbed. It should be strengthened. It should be brought out and extended. A unity of helpful principles together with initiative will increase tremendously the "Individuality of the Man."

This is the day of large transactions, large mergers and amalgamations. It's in the air. Even the Presbyterians and the Methodists have the idea. Some mergers come about as the result of inefficient management, others because of ruinous conditions force a getting together to control market prices. Then there is the lonely man, working alone, cannot or does not want to learn, desires not to exchange useful and vital information concerning operations. The day comes, his business is gobbled up and right here is where I often think that if the manufacturer, the wholesaler recognized more fully the need for working closer together with his partner in the industry how much better would general business be and the tendency toward mergers and monopolies become lessened, rather than made greater.

Prosperity is not always a blessing and those who do prosper must always be on their guard against becoming too set in their ways, too autocratic, forgetful of the earlier years of hard work and close application which if unheeded is apt to bring disaster. We are all in business to make money. We are in business to make a clean reputation. If we do not make money we cannot stay in business very long. The progressive man must be a money-maker to be a real business success. The business-man craves for increased business. This can be satiated by fair means, by energy throughout our factories from the lowest to the highest and we must know that Canada's natural growth should bring about healthy increases in the Paper Box Industry as well as most other industries.

The individual, whatever his vocation in the commercial sphere, whether manufacturer or wholesaler, salesman or executive, must be inspired and soundly possessed with a deep rooted desire to be sincere in all things, a conviction that must ring true at all times. He must be an accurate man. He must be proud of his position in industry, ready and willing at all times to protect his own reputation and character and that of his fellowman when wrongly attacked. He should be a practical man in his line and not an idealist in name only. We all seek to be leaders in industry. Leaders of some kind or other.

We work and strive to build businesses, to have large and successful institutions. How do we achieve this end? Is it by being under a delusion that individual advancement is made by crushing others down? Is it by belittling our competitors? Is it by sharp practice? No it is by dint of hard work and a desire to serve, to be efficient, to produce goods of quality and to market the same at a fair price with a reasonable profit. To be able to shake our competitor's hand and have him feel that there is no wall between us.

The old school of suspicion and bigotry is in a state of decay and gradually passing into the oblivion. The alert man of business of this age sees the absolute need for co-operation, of learning, of comparisons of facts and figures of costs and production, of rubbing shoulders with his competitors and knows that by this method of human interpretation to business, he is increasing in strength and knowledge and becoming a better and more substantial business man. We think we are living in a fast age; perhaps we are. Our tendency is to crowd too much business into our lives that crowds out too much pleasure. We often hear of the so-called slow methods of the Britisher as a manufacturer as against this side of the water. Yet we find British integrity and a Briton's word respected in all parts of the Globe. Thoroughness is exemplified in manufacture, character behind dealings and quality goods and we find British manufacturers are noted for playing the game one with the other, working closely together in most branches of industry.

Some time ago I read the principles upon which your Association was founded, very aptly and sensibly described by your most efficient Secretary Treasurer. These principles are not mere words but words with a live meaning and if carried out in a serious and intense manner will mean a still stronger Association.

I very much doubt if perfection will ever come in Association life while we poor mortals live but nevertheless that does not mean that we should allow our efforts to wane. We must not lose ground. No matter what the annoyances we must go on. Knowing the true meaning of Association life, partners in the same industry, we know of the benefits attained, why let them become bedraggled and diminished because some may not agree with us?

Those opposed have little or no basis for argument against one manufacturer discussing freely with his kindred manufacturer important details for the betterment of the industry. Those in favor have every argument for a continuous and permanent interchange of knowledge one with the other. This must win even in view that in some rare cases there may be some who lack sincerity desiring to receive only and give nothing in return.

In conclusion I would like to say: — To those of you who serve and serve unselfishly, toil on, do not be discouraged, the principle of service cannot but be of profit to you in some way or another and in exemplifying the spirit of service you are unknowingly leading others down the broad pathway to a keener desire to be of service to those around and about them even to their Partners in Industry.

Gentlemen: — I close with this, an inspiration for the times through which we have been passing, a Poem composed by Grantland Rice, entitled "The Fellows Who Stick."

Yes, it's a Fight—
But on by the Shadows and out through the Night,
Taking the Break of the Game as it cracks,
Head up and ready for counter attacks,
Soaking up sorrow and pain as we go,
Crashing through trouble and heartache and woe,
Knowing that Fate, through the length of its span,
Never has beaten a good Fighting Man;
Knowing raw luck, with it's scurviest trick,
Never has won from the fellows who stick
So, head up and ready and on with the play
Though we must stumble o'er graves in the way

Yes, it's a Scrap—
But the fighters are ready to fill up each gap,
Knowing that like has emerged from the gleam
Of softness and slumber that leads to a Dream,
Heads up, and ready to travel the road,
However, weary the burdensome load,
Heads up, and ready for whatever's due,
Pulling together and seeing it through,
Playing the game to the end of the row,
Set for the scrimmage with blow against blow,
Trouble's the Trainer that reaches the top—
Raw Nerve's the Reaper that harvests the crop.

STIMULATING THE DEMAND FOR THE PAPER PACKAGE

By Mr. L. P. MORRISON of Automatic Paper Box Company, Toronto

For once I honestly question the wisdom of our officers of this association in alloting to me so important a subject as "Stimulating the demand for paper packages". When I first received the letter from our good Secretary and considered the importance and size of this subject, for no one will a moment doubt that the very future life of our industry depends wholly on the existing demands, my answer was certainly "No". Before I was able to make this answer final, I received a phone message from Mr. Frame, and with his knowledge of my ability said that surely in two months' time you could think or read up something which would be of interest to the members. It was with this incentive that I reluctantly bowed to the inevitable and here I am. I must admit, however, that playing golf, fishing, or even cutting grass would be more pleasant.

In handling this subject I have divided it into four parts, — Past demand for Boxes, Present demand, What we hope for the future, and How to best realize those hopes.

As for the first part namely "Past demand for Boxes" I will not attempt to take you back to the early memory of some of our members of the so-called pioneer days when boxes were principally made by hand. When an order for 10 M looked like a mountain and an order amounting to $500 gave the thrill of a million dollar proposition. Let me just take you back 12 or 13 years and what do we find? From a solid box viewpoint, perhaps not such a vast difference as compared to folding boxes, but I honestly think if we had figures of sales in those years and compared them with sales today, it would greatly surprise and give food for thought to the most pessimistic member. From that time on we had the usual growth which we could naturally expect in a comparatively young country. Then the great war arrived, and the buying public blessed with more money than they ever hoped to possess demanded something better and better. The manufacturers packed more and more of their products in boxes. The demand increased, old plants bought new and better equipment, new plants sprang into existence and in spite of capacity of more than double what existed some few years previous, the demands for our products appeared so great that we were still unable to properly satisfy. In those dream days we as supposedly business men, again built our childish castles and failed to think of, or purposely avoided the future. The optimism on which we fairly lived forced us to believe that that ever increasing demand would never cease. We were however, at that time educating the manufacturer to the importance of packing their products properly which meant more and better boxes, and also the buying public to the idea of buying their requirements in packages. This education brought about by general business conditions rather than any credit on the part of our members, if properly handled looks like our most effective weapon for the future.

Thus we arrived at the present time, and what do we find? Great and most efficient plants due to the decreased demand in all lines of material, ready to supply requirements almost 40 per cent. greater than those existing. Naturally we ask ourselves have manufacturers changed their method of packing? Have the general public in their crying demand for cheaper living forced the manufacturers to discard the paper package? Has the disgruntled individual who is ever ready to pick out this or that industry and picture it before the world as a useless expense, a luxury, the real reason without a question of the depreciated buying power of a dollar in a word the curse of the times in which we live, taken a throttle hold on our industry? Have these remarks had their effect? No doubt you hear daily remarks such as "Oh! how foolish people are today, my mother, my grandmother, and even my great grandmother bought everything wrapped in paper. Why should we, with no doubt added expense, buy our requirements in a paper box? Why do we support firms who put five cents worth of material in a five cent box and sell it to us for fifteen cents? Why are merchants so indolent that they prefer to hand us out twenty-five cents worth of this or that in a paper package in place of weighing up say one pound in a paper bag for fifteen cents?" These remarks may appear foolish but they are nevertheless true as everyone here knows only too well.

We now arrive at our hopes for the future. We all hope, and I think hope with every assurance of realization that our industry is interwoven so closely with the general business structure of this country that without it nothing could prosper and perhaps not even survive. We hope that manufacturers will realize the importance of not packing their products in a package, but will be ever ready to better the quality of that package. We hope that manufacturers will with the aid of the wonderful machines at their disposal today see that it is more economical to pack their goods in a carton than the old method previously used. That they will fully understand the immense advertising value of that package and instead of spending millions every year in the old time advertising campaign, seventy-five percent of which to my way of thinking fell on barren ground, they will divert a portion of it to the package which we think will if properly handled give them one hundred percent return.

As for the buying public, we hope they will see that they can buy as cheaply in a package as in bulk. That the quality of any product in a package with the name of the manufacturer clearly printed on same must of necessity be of the highest quality. That goods in that sealed package are unadulterated in a word just as it left the manufacturer. That that package with net weight on same assures them of full value and last, but not least, that they fully realize the sanitary quality of the packed product. This in our age when millions are spent yearly in every city, town and village to better the living conditions with the thought in mind that one healthy citizen is better than twenty delicate ones. We hope that the proper packing of food products at least will receive the proper attention. As for the disgruntled man, the hope that the poison on that tongue will disappear, that unless he has constructive criticism backed by facts he will offer none, and while we respect the memory of his ancestors he will not allow that memory to retard the progress of the age in which he lives. That he will in time find out his estimate of added value is only a myth, and let us ever hope that some day we will meet him carrying a full paper box home for wifie.

Now for the all important point "How to best realize these hopes." How to make these desires materialize, how to turn these dreams into realities. In dealing with the manufacturers we can best serve him by advising honestly what he should buy rather than what we feel we can sell him in competition with some other box maker. We are all too ready for the good of our industry, when we are pressed, to suggest a lower quality carton, thus destroying more than fifty percent of the value of what we are selling, and what he proposes buying. If we could only convince him that we are not selling a container but a silent salesman, which day after day is appealing to the public for fair trial. I say if this were a fact, what beautiful packages we could make and what packages would they buy. Would they send a salesman on the road today dressed in overalls. I say "No". Well, they are flooding the country today with those silent men who would use a pair of overalls if they had them for Sunday only. Men, we can encourage that better box, and if we are in earnest, we can make it a reality. To my way of thinking the opportunity is at hand and if we are successful in our endeavor we will get an increased sale of boxes far beyond our wildest dreams. How can we ask for division of that advertising budget and at the same time offer him a package that his good judgment would not permit him to nail up on a backyard fence.

We can also advise in methods of packing. If we could only lessen that burden would not the manufacturers be more willing to listen to our arguments, make his troubles along these lines ours, encourage machines for this purpose wherever possible, make ourselves the packing experts. All these thoughts if carried into effect will certainly increase volume which is what we have hoped for. Due to the fact that human nature is prone to follow the line of least resistance, we must expect that manufacturers will certainly act like human beings and in following this line, give to the buying public what they ask for. They have never expected that the ordinary retailer would be a salesman, and we certainly must admit that their judgment was and is today positively correct. They are simply order takers, giving what they have and never attempting a sale of something else which may even have better value. This condition, bad as it was, has been aggravated in recent years due to the more up-to-date method of merchandising, namely, the cash-and-carry stores.

These conditions therefore force us to concentrate our efforts on the buying public to a much greater extent than on the manufacturers. If we only could thoroughly convince the shoppers that a paper packed article is what they require, what a demand would spring into existence. Before going further I must say that that new cash-and-carry store will be in time a boon to our industry. We have had numerous calls recently from firms packing their particular line in cartons for the first time due to the demand of this particular line of stores.

Now, how are we to educate the buying public? A wide question, without a doubt.

I could suggest an extensive advertising campaign with an outlay of thousands, for anything else would be simply useless, but are we prepared to spend the necessary money? I don't think so. Let me suggest a cheaper way. Perhaps slower, but I think more efficient. Let each one start at home. Sell your own wife the idea, your own family, your own circle of acquaintances, your own employees. Even our own Secretary who honestly admitted some few weeks ago that he still preferred to buy his porridge in a fourteen pound bag rather than a paper box. He didn't feel that a package was worth more than a bag full of meal, which perhaps had for the past few weeks been the playground, the public park for that rat family. There are hundreds of arguments we can use. We must be salesmen. We must at least practise what we preach. Can we expect the public to buy an idea of our making if we do not support the proposition ourselves? Suppose we each only partly convince ten buyers who in turn no doubt would convince ten more and thus start an endless chain which would boost our industry to the pinnacle to which we think it deserves.

Now for the disgruntled man. He is in your circle, I say squelch him. Be prepared to give him facts and figures on added value. If you have none at your disposal give him some anyway, for the world knows his figures are based on guess, when for you there is a possibility of being correct. Let us stand up at all times and defend our industry. We are surely proud of it, if not, we have every reason to be.

In concluding, Gentlemen, the only good I have hoped to obtain with my humble effort is for everyone to stop, think and act.

SANITY AND POISE IN COMPETITION

Paper by Mr. D. H. McDERMID of Somerville Paper Boxes Limited, London,

I do not know why this subject was given to me. I wish I were capable of speaking wisely on the subject because the man who has known how to act sanely and wisely during the past three years has much to be thankful for. They have been difficult years — the kind of years that test men's theories, judgment and saneness.

I think that the first thing to do in facing a difficult situation in business is to analyze the whole situation.

Now in the process of analysis let us first make an analysis of general business conditions as experienced since the end of 1920.

You will remember how in the years preceding that period that the demand for boxes was greater than the ability to supply. New factories sprang up everywhere and old factories added a number of machines to those they already had. Everybody was buying freely and box manufacturers were freely buying machinery. Then came the slump. In 1921 we faced a situation where orders were scarce, buyers were few and as all manufacturers wanted business, purchasers were shopping their orders around to get the best possible prices. These conditions existed during all of 1921 and the first half of 1922. Then conditions started to improve slightly and have continued to improve to some extent although we are not yet, by any means, out of the woods. There is still a considerable amount of idle equipment in the country and box manufacturers in their desire to keep this machinery busy are tempted often to take orders which give little or no profit. Now under these conditions the question for every manufacturer to face is, what is the wisest thing for him to do.

The course, which to my mind is the most sane and the best to pursue is, first, make a careful analysis of your market. Second, make a careful analysis of your plant and equipment.

I look upon these two studies or analyses as being the very foundation stones of a safe policy. The tendency sometimes is, when business is very quiet, to buy new machines with the idea that in this way one would be enabled to secure more business. Perhaps you will, but the question to be considered is, will there be enough business to keep that machine sufficiently active to make it a paying investment? I know one very successful lithographer who was asked some years ago at a convention in Cleveland, how it was that he was never short of work for his machines. He replied: "I make it a point, never to be in such a position that a foreman has to come and ask me what job is to go next on a certain press." In other words, he specialized on certain lines and then always kept his equipment down so that it was capable of producing a little less than he could sell. I know another manufacturer with who I was discussing this point some time ago and he told me that when he could not keep a machine busy sixty per cent of the number of producing hours, he sold it. This is a matter which should be given very careful consideration and I would like to hear some discussion on it. In my own experience one of the things which has been of service to me has been the study of percentage-of-activity of different machines and if I were starting in business again there are a number of machines we now have, which would not be in the new plant.

Now then, having made a careful analysis of our plant and equipment so that we know what are the possibilities of that equipment, a careful analysis should then be made of the possible market for goods which can be turned out with the equipment now in hand and with the knowledge then gained we come to the next main foundation stone and that is:

Constructive Planning

(A) With a well worked out plan and a thorough knowledge of equipment and market, we are in a position to go after business. The question then comes to every man as to what business he can get and sell on his equipment at a profit. I think it is foolish to go after business which your equipment will not enable you to turn out at a profit. It may be for some particular kind of work your equipment is not adapted and you cannot get enough of it to keep a new machine busy for say fifty percent of the time — what is the use of spending time and effort in going after that particular type of business? I would say to concentrate on the kind of work that it will pay you to turn out.

(B) The next very important step for each manufacturer is to know his costs. You know that I have preached many sermons on cost work and so I am not going to start again but I would say this that one of the most important things our association can take up is the working out of some uniform cost system which can be adopted by us all. Every time I get a cost demonstration from the Toronto Carton Club, I have one explanation of the wide variation in quotations given. The last cost demonstration which I received from the Folding Box section, showed me how on a large run of cartons there might easily be a difference of five to ten percent in the quotations given by different folding box manufacturers.

(C) **Quote a price that gives a profit.** In quoting prices always remember that a man cannot remain in business unless he quotes prices that give a profit. In our office we have had many discussions as to whether when things were dull and machines lying idle, it would not be a better policy to take work at cost or even a little bit below cost, so as to save part of our overhead, but we always decided that it was a better policy to quote so that we would make at least a little profit, than to quote below costs.

(D) **Quote only One Price.** I think there is nothing more demoralizing to the trade than for a manufacturer to have two or three prices. To go to a buyer and give him a price as your best price and then when he leads you to believe someone else is quoting lower, to make a second price, causes the buyer to lose confidence in you and makes him feel that the only way to get rock bottom prices is to work one manufacturer against another and in many cases, he misleads the seller into thinking that a competitor has given lower prices where as a matter of fact the competitor has not done so. Undoubtedly we all know many cases of that kind and we also know that those of us who make a practice of giving a price and sticking to it, lose many orders through competitors giving second and even third prices when they allow themselves to be beaten down by the buyer. At one time I used to make a good many contracts for advertising with newspapers. There were a few newspapers who had a fixed advertising rate and would not make a contract at any other rate. There were many, however, who would quote a rate and would finally close the contract at a rate anywhere from twenty-five to forty percent lower than the rate first quoted. I never left one of these offices feeling that I had got the best price; with the man who had only one rate, it was quite different. It is the same way in the box business, if a man knows we have two prices, he will never close an order with us on the basis of the first quotation given and he never feels that he has got our best price, while if, on the other hand, we make a price and stick to it, we establish in him a feeling of confidence in our integrity, which is worth a good deal to us.

Speaking of this two-price business, I recite an experience we are now having. We have one customer using solid boxes about the size of a shoe box, to whom we are quoting close prices. Somebody in Toronto quoted him better prices in carload lots. As we were able to make the rate cheaper in making up in carload lots, we quoted him the same price in those quantities, but now we learn that our Toronto competitor has come back with a still lower price, which we of course will refuse to meet. We do not know who the Toronto firm is but it looks to us bad business to come back with a second quotation on the same box and same quantities and of course it is straight cut-throat business anyway, because it would be impossible for a man to pay freight and make a profit on that class of work.

In conclusion, Gentlemen, I want to sum up what I have said:

1st. Analyze the whole situation.

2nd. On the basis of that analysis do constructive planning.

3rd. Inspire confidence in your customers.

BONUS AND INCENTIVE SYSTEMS

Paper by Mr. A. B. GREEN, of Dominion Envelope & Cartons Limited, Toronto.

It is not an easy task for a comparative newcomer like myself to address a gathering of keen business men, and to tell them anything about their business that will interest them. To hold their attention I must tell them something new, or something they have overlooked, and I recognise the difficulty of finding such a subject. It occurred to me, however, that you might be willing to bear with me for a few moments in listening to a description of certain methods that have proved of great value in other industries, but which have not been used to any great extent in our own.

I take it that you are all interested in making more money, and that you will agree that if you can achieve greater production with your present equipment, greater profits can be arrived at. My object is to describe certain systems of wage payment that have in many instances produced the desired results.

The problem of a fair wage is an ever present one. It is only human nature for a workman to do as little as possible for a fixed wage. It is equally due to our frail human nature that an employer will pay as little as possible for a fixed task. Between the employer and the wage earner there is an inevitable and almost insurmountable antagonism. Between Capital and Labor a well nigh unfathomable chasm. The pity of it is that the interests of each are mutual, and the welfare of one firmly bound up with the other.

To bridge the chasm, innumerable schemes have been attempted. Although there is no hard and fast geographical division, yet for convenience one may divide them into the British plan and the American plan. The British Plan deals with the Co-partnership of Labor and Profit Sharing. It is not within the scope of my paper to touch upon this except to say that by no means all of these schemes have proved to be successes, and to advise the most careful study before attempting the experiment. The American Plan deals with wage incentives to the worker, and is based upon the ideal of obtaining for the employer low production costs, and for the wage earner, high wages. The American Plan can be tried with little risk and very fair prospects of success.

We are all of us familiar with the two most common methods of wage payment — the time wage and piece work. Each of these has great advantages and grave defects, but every other system yet invented is a modification or a combination of these schemes. Let us examine the comparative merits of each.

Time wage depends solely upon the length of time worked, the rate per hour for both time and overtime being dependent upon local conditions. It has the great advantages of clerical simplicity and of being easily understood by the worker. It is flexible, and is immediately applicable to all kinds of work. In fact, in very variable work no other system can be applied except after careful and scientific study of the task. In certain kinds of work, where great personal skill or artistic judgment is required, and extremely high quality is of greater importance than quantity production, no other form of payment can be used.

It will be agreed that this form of wage payment, the most common in practice, has much to recommend it, but its disadvantages cannot be ignored. It offers practically no incentive to quantity production. In theory we believe that we pay according to merit. We figure that it is the function of our foremen to see that each workman produces the maximum possible, does not loaf, and always works as if our business were his.

Let me say, parenthetically, that we expect a little too much of our foremen, and if one of these men, usually risen from the ranks of those he controls, could show all the qualities we expect of him in the way of discipline, teaching and planning, he would be qualified to own our business instead of ourselves, and probably would.

I repeat that we expect our foremen to see that each man puts in a fair day's production, but is it not a fact that Jack, who is so constituted that he does a big day's work, draws exactly the same money as Bill who does just as little as he can get by with? Perhaps, being fair minded, you raise Jack's pay. Charlie is attracted by the extra money Jack is earning and equals his production. You increase Charlie in like measure. What happens? Charlie, having obtained his increase slides down to Bill's measure and you are faced with the alternative of firing Charlie who has proven he is a potentially good workman, or of reducing his pay, in which case look out for the explosion.

Now, there are more men like Bill or Charlie in the average plant than there are those like Jack, especially if the work is only semi-skilled. The result is that Jack does not have too good a time among his fellows, and if there is a suspicion that piecework rates may be installed, you will generally find that Jack's production falls off.

Another disadvantage that strikes one strongly in our own business, is the difficulty of estimating production. I think it is a common experience of folding box manufacturers that while a machine's performance may be accurately forecast, handwork, especially under a time wage system, is where we usually err in estimating.

Because production is usually low under a time wage, unit costs are necessarily high, and one turns for relief to the second of the well known systems—piecework.

Piecework has all the clerical simplicity of time work, is as easily understood by the wage earner. In addition it provides a definite unit labor cost, and it pays the worker strictly according to the work accomplished. It decreases supervision, but it involves inspection. It will be seen that piecework apparently overcomes the disadvantageous feature of time work, and it is undoubtedly true that in repetitive operations requiring no especial skill, piece work is probably the most suitable form of payment, provided always the rates are fairly set, and the conditions of work are, at all times, such, in the way of material, equipment and tools, as to make possible the rapid accomplishment of the work.

A disadvantage of piece work is that it has so frequently been abused in the past by employers that the wage earner looks upon it with suspicion. So frequently in the past have workmen responded to the incentive of piece work only to find that if their earning exceeded a certain maximum, the rates were cut. The result of this short-sighted and demoralizing policy, has naturally been that the workman sets out to fool an employer as to what is a fair time to do a task. To overcome this, rates may be guaranteed over a period.

Piece work rates are too frequently set on a foreman's guess or a general hunch. Sometimes they are based on past experience, but by any of these methods, the rates are probably wrong. If they are too low, the result is dissatisfied workmen and no increase in production. If too high the temptation to cut is very great, with the result mentioned. It has been suggested that beyond a certain high figure a list of discounts might be published, but this is merely a confession of guess rates.

Piece work rates should be based upon an exact knowledge of the task, gained by painstaking observation. The only accurate method to obtain this is by time study.

It may be well to observe at this point, that from the aspect of Costs, piece work can only fix the labor cost of the job. In the case of a man running an expensive piece of machinery, direct labor is only one part, and sometimes a very small part of the total cost. All overhead and indirect costs are inevitably upon a time basis, and the great object of the employer should not be to make the unit labor cost as low as possible so much as to reduce the unit time.

The fact that piece work rates do not vary in proportion to the speed of the operator, that the slow operator who carries the large time overhead obtains the same rate per piece as the fast operator with the small time overhead, led to the introduction of differential piece rates.

Before describing the differential piece work plan, it should be remarked that neither of the two methods of wage payment described overcomes in any way the antagonism between employer and employed to which I have referred. All the plans that follow do, to a very large extent, tend to overcome this, provided that they are known to be stable and fair. None of those are as simple clerically as the time honored methods and involve that over-rated bug-a-boo, an increase in indirect or clerical labor.

Differential piece rates are not the least of the many contributions towards Industrial Efficiency made by the late F. W. Taylor, a man whose clear insight, patient research and inspiring vision have well earned him the title of Father of Modern Scientific Management.

In the Taylor Differential Piece Work System, two piece work rates are given for each task — a high rate where a certain minimum production is accomplished, and a low rate where the minimum is not achieved. Thus, the good workman not only received pay for the larger number of pieces he has produced, but he likewise received a higher rate per piece. To illustrate this, if the standard set is to make 100 pieces in 10 hours, a low piece rate of 5 cents might be established, and a high piece rate of 7 cents. A man finishing 95 pieces in 10 hours would receive $4.75 while his neighbor would receive $7.00 for completing 100 pieces. The incentive of $2.25 for an addition of only 5 pieces is very strong.

The following illustration of the working of the system is taken from Taylor's book "Shop Management."

COST OF PRODUCTION PER LATHE PER DAY

Ordinary System of Piece Work

Man's wages	$2.50
Machine cost	3.37
Total cost per day	$5.87
5 pieces produced	
Cost per piece	$1.17

Differential Rate System

Man's wages	$3.50
Machine cost	3.37
Total cost per day	$6.87
10 pieces produced	
Cost per piece	.69

The Taylor System immediately accomplishes two results:

(1) It pays a wage not only commensurate with the amount of the work done, but also with the speed with which the work is done.

(2) It proclaims unmistakably to the operators that the management far from thinking of cutting rates, actually pays an extra bonus on all the product when a man's daily wage exceeds a certain minimum.

This system has been epitomized by one writer as that system where "nothing succeeds like success, and nothing fails like failure."

The principles upon which Taylor based his system are worth repeating:—

"(a) **A Large Daily Task.** Each man in the establishment, "high or low, should daily have a clearly defined task laid out before him. This task should not in the least degree be vague "or indefinite, but should be described carefully and completely, and should not be easy to accomplish."

"(b) **Standard Conditions.** Each man's task should call for a full day's work, and at the same time the workman should be "given such standardized conditions and appliances as will enable him to accomplish his task with certainty."

"(c) **High Pay For Success.** He should "be sure of large pay when he accomplishes his task."

"(d) **Loss in Case of Failure.** When he fails he should "be sure that sooner or later he will be the loser by it."

"When an establishment has reached an advanced stage of organization in many cases, a fifth element should be added, "namely, the task should be made so difficult that it can only "be accomplished by a first class man."

The system has been criticized because it offers practically no incentive to the average man. Mr. Taylor's words quoted above answer this. This system was deliberately devised to attract only the very highest grade men, and to pay such men from 30 per cent to 100 per cent beyond the wages usually paid.

This method is eminently suited to cases where repetitive operations upon expensive machinery are involved. Its chief defect from some standpoints is the large amount of preliminary work necessary before it can be installed. It may well be said, however, that this preliminary work is of such great importance, so surprising in the waste it discloses and the economies it discovers from the first moment it is begun, that any system that brings executive attention to bear upon this work is well worth while.

The work preliminary to the installation of the Taylor System, or any other system where exact standards are necessary, is roughly as follows:—

Standard times must be arrived at. Standards based upon past experience or upon a foreman's estimate are seldom sufficiently accurate for a system with so large a labor incentive. Methods of scientific research are applied to the work. First it is examined to eliminate all wasteful features whether of motion or materials. Then, painstakingly, the ideal process is built up. The proper sequence of motions is arrived at and recorded, and by means of elementary time studies, a standard time for the work is computed after making all necessary allowances for fatigue and unavoidable delays. The position of machines, benches and tools is made the most convenient possible, the best kind of appliances to use is carefully studied, the routing of work and material is carefully standardized, and no detail that affects the rate of production escapes minute examination.

The above work is the function of the Industrial Engineer. This profession has now won back the respect to which it was entitled. At one time, encouraged by the astounding success of the pioneers of the profession, a number of parasites unfitted by knowledge or aptitude for the work, called themselves "Efficiency Experts" and succeeded in installing a great deal of red tape without accomplishing any economy. To-day, the Fraternity have largely purged themselves of the unfit, and do actually accomplish savings far greater than the substantial fees they are entitled to ask.

The Taylor System, then, is not an easy one to install. It assumes a factory management nearly 100 per cent. efficient, and I do not think I disparage any one if I state that practically no one of us can lay claim to any such perfection.

Modifications of the Taylor System have been tried more or less extensively. For instance, a guaranteed minimum wage has been offered. In other cases, in place of two piece work scales as in the Taylor System, a graduated series of as many as ten steps has been tried.

The most widely used modification is that known as the Gantt Task and Bonus System which was invented by a colleague of Mr. Taylor, and first put to use as a stepping stone to the more severe system. The following quotation from Gantt's book "Work, Wages and Profits" briefly describes the system:—

"If the time allowed for a task is three hours, the workman who performs is in three hours or less is given four hours pay. He thus has an incentive to do as much work as possible. If the workman fails to perform the task within the time limit, he gets his day rate. The time allowed plus the bonus is the equivalent of a piece rate; hence we have the piece work for the skilled and day work for the unskilled."

The plan is, in brief, a straight time basis up to the point where a workman produces standard production, and from that point onwards, a piece work basis.

Another plan that presupposes the establishment of an only slightly less highly organized system of Factory Management is that developed by Mr. Harrington Emerson, famous for his work on the Santa Fe Railway, and perhaps the most entertaining of all writers upon Industrial Management. With his system, a graduated bonus is paid from the point where 65 percent. of the standard is attained, and upon obtaining standard production a 20 per cent. bonus is paid. The standard is so set that it is possible to exceed it, and the bonus increases in like measure, so that for 120 per cent efficiency the bonus is 40 per cent and for 150 per cent. efficiency the bonus is 70 per cent. In the earlier stages the bonus is very small.

An objection to the Emerson scale is the fact that the scale is not easily understood by the workers. This can be overcome by carefully worked out charts and tables, but several simplified scales have been worked out. Other scales like that of Knoeppel give greater reward at the lower efficiencies.

The Emerson plan is widely used and has proved very successful. It has frequently been introduced as an intermediate plan between day work and a final plan. It is highly desirable that the standards be carefully set.

Each one of the previous plans presupposes that the standard time has been more or less scientifically arrived at. The Halsey Plan was first introduced without setting standards by time study, and although in every incentive scheme time study is advantageous, yet many successful installations of this plan and the Rand method are running without any such elaborate preparation.

It is interesting to note that Mr. F. W. Halsey was employed by the Rand Drill Co. of Sherbrooke, P.Q., when he introduced his plan. It consists briefly of setting a standard time for a task, and should the worker take less than that time, to share with the worker the saving in time, the worker receiving his share at his regular rate per hour. This share is usually one-third or one-half. For instance, if the task set was required to be accomplished in ten hours, and the workman completed it in seven, he would have saved three hours. If his rate were 50 cents per hour, the saving would be $1.50, and his share of this saving would be 50 cents or 75 cents in addition to the $3.50 he would receive for 7 hours at his regular rate. Should the workman take longer than 10 hours he would be paid at his regular rate.

This plan offers considerable inducement to the wage earner and commensurate savings to the Employer. It is of very widespread use, and the offer of half the savings earned usually appeals to the worker as being a fair proposition.

Another plan that has a great deal to recommend it is that known as the Rowan Plan. It is not so simple a method as the Halsey — is more difficult to explain to the workmen, but it has the advantage of saving the employer from paying excessive rates in case an error in the standard time has been made. No matter how quickly a worker may perform his task, he cannot earn as much as double time.

In this plan the time saved is expressed as a percentage of the standard time, and that same percentage is added to the worker's time rate as a bonus. Thus, if the worker saves two hours out of ten, his saving is 20 per cent. and he would receive for his eight hours work a rate increased by 20 per cent. over his regular rate.

This system will become clearer if it is remembered that when one quarter of the time is saved, time and one-quarter is paid. When one half the time is saved, time and one-half is paid. When three-quarters of the time is saved, time and three-quarters is paid.

A scheme that has been recommended as an improvement upon the Halsey or Rowan plans is that known as the Barth Premium. The Workmen's compensation in this plan follows the Halsey 50 per cent. premium plan quite closely until about one-half the time is saved. At greater savings than one half, the worker's return is much less than in the Halsey plan though more than in the Rowan plan. It, therefore, offers to the employer a greater protection against badly set standards than does the Halsey, but gives greater rewards for high savings to the worker than the Rowan.

The chief difficulty is the method of computing this bonus. It involves the extraction of a square root, and although this is a simple process where slide rules are used, it is felt to be too complex for the average office and can only be explained to the workers by means of tables.

The Estes Organization recommends a plan known as the 100 per cent Premium Plan. This method has the advantage of extreme simplicity in calculation. A task time is set and the worker receives one hour's pay at his regular rate for each task hour's work that he performs. In other words this is a piece work system cleverly devised to be upon a time rather than a dollar basis.

Various combinations of piece work and time work have been put into practice. For instance a time rate at one-half the usual figure might be offered together with a piece work rate at one-half the usual price, the worker receiving the sum of the two. This has the advantage of simplicity, and where a saving is made it is exactly the same as the 50 per cent. Halsey plan.

Combinations of piece work and time work other than 50 per cent. might be devised to suit special conditions.

It would be an easy matter to describe a great many other schemes that have been invented, but the majority of them are adaptations of these touched upon. Some plans take wastage upon material into consideration but there is no difficulty in adjusting any of the plans described so that the worker would receive an additional premium for minimum waste, or a discount from his bonus for excessive waste.

Other plans aim to pay all the bonus to the foreman upon the assumption that he will share with the workers. Some take material into account, in which case the foreman becomes to all practical purposes a subcontractor. Such plans have little practical application to our business, and I will not enlarge upon them.

I would conclude with a few general considerations.

(1) Take time and care to set your standards carefully.

(2) Guarantee that these standards will remain in force for a reasonable length of time; certainly not less than three months, preferably so long as there are not mechanical changes in the process.

(3) Give to your foremen, inspectors, adjusters and your indirect laborers a bonus based upon the average bonus earned by the direct laborers they serve.

(4) When direct bonuses cannot be installed—group bonuses are desirable.

(5) Keep your workers constantly under the influence of the incentive. This can be done by publishing daily at noon the previous day's bonus earnings.

(6) Make your bonus payments every pay day. A long deferred reward loses its incentive.

(7) Do not cut rates merely because the workers' earnings are large. Such a result is the object of installing the system. Do not forget that your costs are decreased in more than like proportion.

(8) Lastly, make sure your workers thoroughly understand the system, and are convinced that it is fair. You cannot take too much trouble to make sure of this. A reputation for being fair is worth twice a reputation for being generous.

(9) No bonus system can take the place of management. A good bonus system may fail under bad management. Under good management, especially that ideally good management, that not only has efficiency but also personality and goodwill that will permeate the organization, a well chosen bonus system will there find its natural soil, and will bring forth fruit many fold.

In conclusion, let me state that a properly designed bonus system not only pays according to effort, increases earnings, decreases costs but it also tends to cement the common interests of workers and employer, and it builds up for the latter an asset of loyalty and goodwill that cannot properly be reckoned in dollars and cents, which cannot be bought for money, and which may be easily the most valuable asset in his business.

TRAINING TO MAKE QUALITY BOXES

By Mr. Geo. O. Slingerland, Mechanicville Paper Box Co., Mechanicville, N. Y. Director of National Paper Box Manfrs' Association of United States.

It has been a great pleasure to attend a Canadian Box Makers Convention especially in this wonderful place that is largely as much American as Canadian.

Your good secretary asked me to write about Training to Make Quality Boxes. Quality boxes are the result of quality thinking and planning. They are made of good workmanship and cheerful spirits in clean bright factories. They cannot be made with discontented girls, unsanitary work benches or poor material. The spirit of good cheerful workmanship has got to follow the box from the time the board, paper and glue are bought until the boxes are in the hands of the customer. I am perhaps fortunate in having girls trained to make good boxes, but I think that anyone can train the right kind of girl if they themselves are possessed of the qualities that make quality. My idea has always been that a girl should only make such boxes that she is capable of making well. It requires a little judgment and tact when they are starting in on something new as they perhaps are nervous and afraid that they cannot make as much as on work they are accustomed to, but a little diplomacy will work wonders. I have noticed that the neat, clean girl turns out the best work. It takes quite a while to make a good worker out of most of the girls and some can never get the work neat, but barring marriage, sickness or removal from town, I have had good success in keeping trained girls to work. Have had two for 20 years, three for 15 years, three for 10 years and others ranging from 10 years to 3 years. During abnormal war-times and after, I had to take on a great many new ones and it surely required tact and diplomacy and everything else to keep going. Whenever I saw more than one girl approaching my office, I wished for a cyclone cellar to hide in until the storm had passed. Even the old reliable standbys were innoculated with the "get more for less" idea. I treat all the girls with respect but have never allowed myself to get more than friendly and in more than 35 years that has been some job. They know that they can call on me for any assistance it is in my power to give at any time, advice or help financially or otherwise. I generally have a couple of dinners a year in the shop. I however do not try to act as sole host, but furnish something like a roast pig, turkey or roast meat and ice cream and let the girls bring the salads, rolls, coffee, potatoes and the like so that they have a personal interest in the dinner without the thought of charity in any form. Several times I have hired a tug and flat boat and taken them on an excursion up the river. On these occasions I have let them furnish the entire feed and joined in with them in my share of expenses, pro rata. Other times I have had them to my camp on the Hudson River a few miles north of the factory. All I would do would be to furnish trucks to transport them and bring them back and perhaps make coffee and furnish ice cream. This establishes a mutual friendly feeling and avoids any thought of condescension which is fatal in the relation of employer and employee.

Now as to actual making of quality boxes. Give the girl a clean table, good glue, board cut and scored square, cornered out nicely, set-up square, paper cut just right, with a friendly feeling toward the work, the forelady and the boss, and quality boxes can be made. The conditions surrounding the making of a quality box are not made by the girl who makes them. It is squarely up to you to furnish her with the tools to work with. A forelady that can listen in on conversations and know the different feelings that exist between girls can do a lot by gradually getting together girls who are congenial or perhaps by putting a girl who is inclined to be sporty or one with a cross-grained disposition, in between a couple of girls who are sensible or good-natured.

I want to tell you of a happening a couple of years ago. I had an order for 100,000 bead necklace boxes. It was new work and I had agreed to produce them at the rate of 10,000 a week. I tried a girl who had had some experience on this class of work. It was a box about $9\frac{1}{2}$ x $2\frac{5}{8}$ x $\frac{3}{8}$ with a $\frac{1}{2}$ inch shoulder, hinged box, one piece cover, one piece made wet wrap with a piece on the back covering the hinge. The operator was to finish the box after the paper had been put on lower and upper part of the box. Her part was to put the cloth hinge on the box and cover, stick the shoulder in and out on the back piece to cover the hinge. This girl, after a few days work, said that 200 was the best that could be done. She was working day work and I was not satisfied that that was the limit. A girl from the High School applied for work after school had closed.

She was a likely looking girl and we showed her the work and she said she could do it. She was 15 years old and could only work according to New York State laws, from 8 to 5. She started in with the girl who was working on the work. The second day she had finished 210 of the necklace boxes, along side of the girl who said 200 was the limit. Then I put a sliding scale of prices in effect: up to 300, 75c per 100; 350, 80c; 375, 85c; 400, 90c; 450, $1.00. At the end of a week she was in the 350 class and in the second week she had got ten up to 450 per day and the older girl was still on the 200 mark. So I changed her work and gave the new girl's chum a job. She caught up to her in a week and I never enjoyed paying from $26 to $30 a week more than to those two girls. They were an example to the whole shop. The working hours were 7:30 to 5:00 and 7:30 to 11:00 A. M. on Saturdays. Those girls could only go to work at 8 and stop at 5, but at 8 they were on the job and at one minute of 12 they were on the job, at 1 they were on the job, and at 1 minute of 5 they were on the job. There was no visiting, nothing but work and after that, I didn't want a cyclone cellar. When a delegation appeared after that for more money, I said sure, your work will go on a graduated scale. You work like the two Bead Box finishers and you can make as much money as they do. The delegations soon quit coming and if I had had that cellar, I could use it for storage now for that article of commerce that Canada has and the United States wants. I don't need it as a refuge. Now this is an example of what a production wage will do.

Another means of holding down the turnover of help is a Bonus. A good many manufacturers start to see red when they hear the word bonus. I do myself on daily or weekly bonus but a little 2½ or 3 per cent bonus at the end of the year for any employee that hasn't lost any time except through sickness or no fault of their own, is a great means of solving the turnover in a shop. Try it out as a surprise to them. Do not promise anything definite. Next Christmas have some nice little checks prepared with a Merry Christmas and Happy New Year printed on them and hand say 2 per cent to them. If your payroll is $20,000, that is $400.00. But do not give the ones who have lost time on their own or those who have left and come back. Let it be understood that a bonus will be paid for steady work with no lost time through no fault of their own. But do not specify the amount. If business is good the next year, make it a little more, if not good, a little less. But the little it costs you will be more than made up by the good feeling that comes from practically being taken in as a partner, and those little parties encourage them, but don't slop over, make yourself one of the help.

I have been playing ball with a team I had chosen against one the chauffeur had picked out. A 17 year old slip of an Irish girl was batting. I was pitching to her and she called me a big boob for not getting the ball over so she could hit it. That was a compliment, she accepted me as an equal. It doesn't hurt discipline to mix with them on these occasions, but do not have them stiff or formal. Play with them as hard as you can. Results will show in the work and in loyalty to you. Avoid faction in the factory. If you have an outing, see that they all go. Whether they are Irish, Scotch, English or French, Poles or Italians, see that they are all along and have the relatives go also. But avoid anything that savors of condescension. I have talked quite a lot about the social part of a box factory, but I absolutely believe that it is the yeast that helps to make quality boxes. One of the first things to teach a girl in making quality boxes is, that good enough is not good enough. That good enough idea is not right. Good is the word that should be the slogan in all box factories. I make a large number of boxes to put silk gloves in. These boxes must help sell the gloves. The box is a patented box and good enough is not known. They have got to be right and they are right, when they go out. Candy boxes the same. They all know that candy is something to eat and a dirty finger mark or a drop of glue is not something that they would want to find in a box of candy they had been presented with. Get the spirit of pride of good workmanship, in the girls, and with the materials cut right, proper working tools and surroundings, and quality boxes will be the result. It is part of my scheme to have satisfied girls and as I said before, good materials, pleasant surroundings, foreladies who can smile instead of frown, use tact and have a human understanding with the girls will go a long way towards making quality boxes.

REDUCING THE COST OF ACCIDENTS

By Mr. F. W. FISHER, of Messrs. F. W. FISHER Co., Limited, Toronto

The subject originally assigned to me, "Accidents", is so closely bound up to the cost of them that I cannot discuss one without the other. For reasons which will be explained as I go along my remarks are principally addressed to the Ontario Members. But I feel that my subject is so broad and of such vital importance to every manufacturer whether of Paper Boxes or some other commodity, that everyone here will be interested.

Some fifteen months ago at the Toronto Carton Club a discussion took place on the high cost of Workmen's Compensation Insurance and on the constantly increasing rate we were paying. A Committee was appointed to investigate the conditions. This Committee met, interviewed the Workmen's Compensation Board and prepared certain propaganda with a view of reducing the number and severity of the accidents in our factories.

Each industry contributing under the Workmen's Compensation Act is usually placed in a separate group so that the contributions of one class of manufacturers is not used to pay for the accidents of some other class. We found that after operating for several years up to the close of 1920 our industry known as Section 19, Group 3, had accumulated a small surplus. The rates paid ranged from 70 cents to $1.20 per $100.00 payroll.

1921 proved to be a very disastrous year. Several bad accidents occurred in Paper Box Factories, and the cost of them was so great that it wiped out our surplus and necessitated an additional levy of 30 cents per $100.00. Even then, when the final figures for the year were complete we still had a deficit of several thousand dollars. These Gentlemen, were the results for *one* year.

Your Committee determined that this calamitous year must never be repeated, and realizing that criticism without suggestion would not be acceptable we set about to secure attachments and recommendations for shop practice that we felt would be of enough value in every day use, to bring about a reduction in accident frequency with a corresponding saving in money.

These recommendations were sent out some months ago and we believe that they have been of some value to you. We have recently received our Workmen's Compensation Assessment bills for 1923. You will note a rebate on each one of one-half the money you contributed for 1922, making the rate for that year 75 cents, exactly one half of the previous year's. This rebate is a cash saving of over $10,000, a portion of which was received by every manufacturer of paper boxes in Ontario. Such were the results for one year during which much more attention was paid to "Safety First".

The accidents for 1922 are much less serious and are fewer in number than they were in the previous year. They also cost very much less, amounting to less than $8,000 whereas in 1921, the figures were in excess of $25,000.

Believing that anything the Employer can do to prevent accidents is not only a very humane thing to do but because also Accident Prevention is a very profitable way to invest money the Committee made several recommendations that certain Safety Devices and Shop Rules be compulsory. The Toronto Carton Club unanimously approved of them and we now propose to discuss them here and if possible secure the consent of the Ontario Members of the Canadian Paper Box Manufacturers Association so that our Secretary may take the necessary steps to have these recommendations made compulsory.

Mr. Frame will now read the list of recommendations and we will take them up individually.

Before discussing these recommendations I might just say that had they all been in force during the year 1921 the Paper Box Manufacturers of Ontario would be the richer to the extent of nearly $20,000. This would have benefited not only those firms who experienced bad accidents but every single firm in the whole province. Each of us have to help pay for the accidents of everyone of us. Whether we be innocent or guilty we pay just the same.

Recommendations

1. The placing on every Automatic Clamp Paper Cutter of a two hand throw in.
2. That no Paper Cutter be operated where the clamp rises higher than the knife.
3. The compulsory installation of Stayer Safety Heads.
4. That a pair of Stayer Pliers be chained to each Staying Machine so that they cannot be carried away.
5. The compulsory use of Corner Cutter and Mitre Machine Guards.
6. That all operators of machines (both male and female) be required to remove rings from fingers while working at machines.
7. The installation on every Platen Cutter and Creaser Press of a Safety Device, which will prevent the operator being injured by the action of the press. The Committee recommend the safety device recently invented by Robt. Gold which in their opinion will absolutely prevent accidents on this type of machine.

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Toronto Typothetae

7. The installation on every Printing Press of the type known as Universal, Colt's Armory, and other Presses with a similar motion, of a Safety Device, which will prevent the operator being injured by the action of the Press. The Committee recommend the Safety Device recently invented by Robt. Gold which in their opinion will absolutely prevent accidents on this type of machine. Gordon Presses are not included in this recommendation.

THOSE IN ATTENDANCE

Among those present at the convention were the following: Mr. and Mrs. A. G. Allen, Paper Sales Co., Toronto; J. J. Arnold, Canadian Paperboard Co.; Miss Alison, Galt, Ont.

Mr. and Mrs. Geo. Bochmer, K. & C. Bochmer Co; C. Wintar Brown and Miss Irene Brown, The D. F. Brown Paper Box Co's, Robert K. Brown, and J. L. Bourke, Canada Nashua Paper Co.; E. Bitterly, Warsaw, N. Y.; J. J. Binns, North Tonawanda, N. Y.; Rob't. L. Brayley, The Miller Bros. Co., Glen Miller, Ont.; David Brown, The J. L. Morrison Co., Toronto.

H. J. Cody, Toronto; Arthur M. Claffee, H. D. Knowlton Co.; E. G. R. Clarke, Canadian Nashua Paper Co., Montreal; E. P. Cook, of Samuel R. Parry; J. L. and Mrs. Constantineau, The King Paper Box Co.; H. A. Doughty, Canada Paper Co.; Robert S. Dunlop, Dominion Paper Box Co.; Mr. Wm. and Mrs. Eager, Hamilton Paper Box Co.

S. J. Frame, Secretary-Treasurer, Canadian Paper Box Manufacturers' Association, Mr. Wm. J. & Mrs. Feldkamp, Canada Glue Co.; F. W. and Mrs. Fisher, F. W. Fisher Co., Toronto; Mr. and Mrs. Fielder, The Fielder Paper Box Co., Toronto; W. T. and Mrs. Filay and J. R. and Mrs. Forth, the A. D. Shoup Co.; Martin Teybush, New Jersey Machine Corp., New York; G. D. Falkinberg, Price Bros. & Co.; A. C. Funk, Dextra Products Inc., Buffalo.

A. Bertram Green, Dominion Envelope & Cartons; J. B. M. Gibson, Ottawa; R. C. Gullen, Hobbs Mfg. Co., New York; J. H. Gledhill, National Gum & Mica Co., New York; R. S. Gold, Paper Sales Ltd., Toronto; Chas. E. Griffith, Jr., Price Paper Inc., Candem, N. J.; M. J. and Mrs. Griffin, Standard Paper Box Co.

W. J. Hood, Gummed Papers Ltd.; John, Jr. and Mrs. Hewitt, Paper Sales Ltd; Art Harvies, The Canada Paper Box Co., Montreal; W. J. Hampell, Hampell Paper Box Co., Brantford; A. C. Hacher, St. Catharines Paper Box Co.; O. A. Hutchinson, Toronto; G. and Mrs. Hancock, and Miss Hancock, Galt, Ont.

Alfred and Mrs. Jepthcott, and Miss B. Jepthcott, Toronto.

F. A. Kerr, Chas. Reid & Co., Hamilton.

J. B. Lawrason, Lawrason-Doughty Co.; Jas. Logie, Canadian Paper Board Co.

M. F. McKay, Paper Box Co.; Duncan H. McDermid, Somerville Paper Boxes, Ltd.; Robert Minkow, Hobbs Mfg. Co.; F. W. McGraw, Ernst & Ernst, Buffalo; John R. and Mrs. Marshall, The Canadian Nashua Paper Co., Peterboro.; A. and Mrs. Manchester, Regal Paper Box Co., Toronto; A. B. Meredith, Meredith, Simmons & Co., Toronto, F. E. Theodore Mauz, Rochester, Mfg.; L. P. Morrison, Automatic Paper Box Co., Toronto; N. V. Morrison, W. J. Bell Co.; W. H. McCullough, Brompton Pulp & Paper Co.; W. W. Miller, The Miller Bros. Co.

C. F. Micholls, London, Ont.; J. A. & P. K.. Northey, Telfer Paper Box Co.

A. F. Ogh, Paper Sales, Ltd.

C. B. Pearsall, Price Bros. & Co.; D. Porter, Rudd Paper Box Co. Toronto.

C. DeWolf Reid, Montreal; David F. Robertson, Canadian Paperboard Co.; Chas. F. Rand, North Tonawanda, N. Y.; Harry Edwin Roden, The Shears, N. Y.; C. T. & Mrs. Reid and Miss Reid, Chas. Reid & Co., Hamilton; Geo. B. Reid, Ontario Paper Box Co.; Mr. and Mrs. and Rowell, J. C. Wilson, Ltd., Montreal; John T. and Miss Prudence Robinson, John Robinson Co., Hyde Park, Mass.

Chas. V. Syrett, Victoria Paper & Twine Co., Toronto; Geo. O. Slingerland, Mechanicville, N. Y.; Bart Sproule, Collett-Sproule Ltd.; Geo. and Mrs. and Miss Audrey Stephenson, Stephenson Paper Box Co., London; Paul G. Otto P. and Mrs. O. P. Schultz, John T. Robertson Co.; R. J. and Mrs. Sharp, Milwaukee Lace Paper Co.; Kohn J. Small, Guelph Paper Box Co.; H. W. Spears, M. D. Knowlton Co.

W. C. Traftson, Stokes & Smith Co.; Avis G. Thomas, New York; Jas. W. and Mrs. J., Roy and Mrs. R. Tresidder, Tresidder Bros., Hamilton; Chas. S. and Mrs. Taylor Ritchie and Ramsay, Ltd., Toronto.

M. J. Whippola, New Jersey Machine Co., Toledo, O.; T. G. and Mrs. Whitside, Stratford Paper Box Co., Stratford; Chas E. Whitter, Canadian Paperboard Co., Montreal.

One bad habit can hurry a man to his grave in middle life who, without it, might have lived another thirty years.

Steel Belts and their Application to the Solution of Conveying Problems*

By HARRY CARLSON,
Sandvik Steel Works, Inc., Sandviken, Sweden

The steel belt is by no means a new development, although it has only recently been placed on the American market. During the past thirteen years it has been extensively used in Europe in the many phases of the engineering field—over 1,300 installations having already been made for conveying such materials as clinker, cement, sand, rock, ore and ore concentrate, coal, coke and charcoal, carbide, silica, soda, salt, sugar, cossettes and beet pulp, milk powder, yeast, vegetables, sweets and chocolates, deals, battens, slabs, edgings, chips and sawdust, clay, gypsum, brick, and briquettes, bags, boxes, packages, steel forgings, gun cotton, glass.

Much experimenting and conscientious application has been necessary to bring it to its present state of development, where it has without a question of doubt demonstrated its decided superiority over conveyor belts at present employed, as well as other types of conveyor equipment. In every installation made it has been found to be both efficient and economical.

The adaptability of steel belts for solving conveyor problems in all phases of the industrial field for all kinds of materials has by no means been completed, but is still in the process of development. Intimate co-operation between the manufacturers, who are familiar with the particular features of design so essential to steel belts, and the customer, who wants certain work performed at a given time and under given conditions, is necessary in order to arrive at the end desired.

I shall endeavor in this paper to discuss the steel belt from a general point of view, giving you an idea as to what the steel belt is, how it is set up and works. A short history of the steel belt known on the market as the Sandvik belt will undoubtedly be of interest to you.

Development of Steel Belt

The manufacture of steel belts was started about thirteen years ago by the Sandvik Steel Works of Sandviken, Sweden, which has had a wide experience of over fifty years in the cold rolling of steel. The company has always made a specialty of high grade cold rolled materials, and for this purpose acquired controlling interest in a large number of the world famous Swedish mines producing iron ores low in sulphur and phosphorus. It may be interesting to know that the expression "Swedish steel" was originally applied to steel made from these ores.

Innumerable examples evidence the fact that, no matter how good the raw materials may be, skilled labor is required to obtain a high class finished product. The Sandvik Steel Works were among the first to produce high grade steel; in fact, the first to produce Bessemer steel on a commercial basis, and have persistently kept up traditions. As a result they have today at their disposal a force of labor trained through generations for this particular kind of work.

The Sandvik steel conveyor belt was not originally manufactured for this purpose, but the application as a belt was found for the exceptionally long, wide, straight and smooth steel strips that the rolling mill was capable of producing. After patient experimenting covering a period of years, the methods of rolling, hardening and tempering were perfected and the product accordingly improved to meet its particular requirements before it was finally placed on the European market thirteen years ago.

Great Strength and Long Life

The many attempts made to utilize steel in some shape or other, to improve the ordinary conveyor belts, and, further, the successful application of the Sandvik belt in almost every phase of the industry, should evidence the fact that present belts need improvement. They can be supplanted by something better, and it is interesting to note that the steel belt in most cases more satisfactorily meets the requirements of a conveyor belt. It is self-evident that no other conveyor belt material can have the same high wear resisting qualities as the steel belt.

It is a well-known fact that a piece of steel subjected repeatedly to stresses far below the ultimate strength will break, due to the destruction of its molecular structure, crystallization or "fatigue." For the ordinary grade of steel used in machine building the maximum bending stresses allowed are limited to about 12,000 pounds per square inch—for high grade alloyed steels stresses allowed may run considerably higher.

The Sandvik steel belt is subjected to a stress of 28,000 to 30,000 pounds per square inch when running over a standard pulley 40 inches in diameter. We might mention incidentally that in the standard practice of steel belt design the width of pulley face is three-quarters of the width of the belt, crowned in the usual way, but made flat in the center one-third of the width of the pulley face. In addition to the aforementioned stresses it has to take the initial tension and the pull required, which, however, in contrast to other belts, are nominal for all ordinary installations compared to the bending stresses. The latter are determined by the proportion between the thickness of the belt and the diameter of the pulley. For practical reasons a high carbon steel strip of certain width cannot be rolled to more than a certain thickness, hence it is necessary to establish a standard diameter for pulleys, specific rules for the location of idlers, especially when the belt is to be caught up, etc.

High-grade Materials Used

The Sandvik belt is made of the very best Swedish charcoal steel, cold rolled, hardened and tempered—hence it possesses a hard, smooth and dense surface, making it highly resistant to rust, as well as chemical action, evidenced by hundreds of successful installations in the chemical field conveying wet and hot material, and running in the open air subjected to the influence of rain, snow and sunshine, and under extreme changes of temperature. The steel belt does not deteriorate when idle — the smooth surface facilitates an unexcelled cleanliness — to be obtained by the simplest means; finally, the fact that stresses due to initial tension and pull are nominal compared to bending stresses accounts for the possibility of making conveyors perforated without influencing appreciably the life of the belt, since the perforating has no influence on the bending stresses, the latter being exclusively determined by the proportion between the belt and the diameter of the pulley.

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* From "The Paper Mill".

At the present time it is rolled in widths up to 16 inches, one-piece lengths up to 350 feet, and thicknesses up to .04 inch. The longitudinal edges are rounded and smooth. The flexibility of the material may be judged from the fact that the coil of 300 feet of 16 inch belt is sent out packed in a case 2 feet square by 1 foot, 6 inches deep, weighing approximately 2 pounds per foot run.

Characteristics of Steel Belt

The Sandvik conveyor is designed in two ways, either with the conveying strand sliding on a wooden support, sometimes fitted with skirting boards, troughlike, the return strand being supported on idlers, or else both strands of the band are carried on rollers in the usual fashion. The sliding type, with or without skirting boards, is extensively used for conveying nonabrasive material. Next to no wear is caused in this type, even for conveyors of considerable length, as the surface of the runners soon acquires a polish that the friction and consequently the power consumption is almost negligible.

As compared with flat rubber belts of the same width, the steel belt possesses greater transverse rigidity and therefore a higher capacity, as the edges, even with a one-sided load, do not yield in a downward direction. This allows a relatively broader part of the belt to be used for carrying the load. These attributes are obvious and are due to the fact that the steel belt is less flexible than the textile fabric.

The speed at which the steel belt should be run depends on the length of conveyor — ordinarily it varies between 135 and 300 feet per minute — and capacity is thereby determined. The average speed, however, for the average length conveyor is about 200 feet per minute.

Considerable attention is given to the proper designing of feeding hoppers to ensure the maximum load per foot of belt.

The joint is an ordinary riveted lap joint with short overlap, and can be made complete in less than an hour. Countersunk rivets are used. For punching the holes a special tool is supplied, which makes the jointed work extremely simple. It has been found, after extensive experiments with many different kinds of joints, that the one herein mentioned is by far the simplest, most efficient and economical.

The Belt in Use

In many cases existing structure can be easily adapted to accommodate steel belts, and under favorable conditions existing and pulleys and idlers can, with a little modification, be kept in use also. Erection is comparatively simple and full instructions are supplied. Most customers undertake the erection themselves, merely having an experienced erector sent along by the manufacturer to generally inspect after completion, mount the belt, make the first joint, and start up.

A special feature is the remarkable ease and simplicity with which material can be discharged at any desired point along the conveyor without the use of cumbersome and expensive trippers. The belt does not stretch and the tension devices are therefore very simple, as they only have to take up trifling variations in length, caused by changes of temperature.

Unlike other conveyors, the drive can be arranged either at the head or tail ends to suit the local conditions or purchasor, and is equally efficient at either end. When required, both strands can be used simultaneously for conveying in opposite directions and under suitable conditions the conveyor can be made reversible.

Inclines vary somewhat with the material being handled. In a general way, a figure of 1 to 4 is the limit for a smooth belt which has to be scraped off for unloading, but if terminal unloading only is to be used, slats can be affixed to the belt at intervals and the incline increased to about 1 in 2.75.

It has frequently happened that when elevators have been favored for a lay-out on account of the incline, a conveyor lay-out has satisfactorily solved the problem at lower cost and at much greater reliability and freedom from a large number of moving and wearing parts.

The steel belt conveyor is not a ''cure-all,'' but is claimed to be simpler and more durable than the already simple band conveyor, to offer stronger material, and avoid the large number of working parts of drag link and gravity bucket conveyors, and to be competitive in price.

It is obvious that the introduction of the steel belt has widened the field of application of the belt conveyor, which previously had not been suited for conveying hot and sticky materials when only the textile and rubber belts were available, and it should be welcomed by the engineer interested in the handling of materials, as the steel belt is the ideal system of conveying. Such sticky material as sugar, for instance, can be cleanly and efficiently scraped off. Sharp edged cutting materials, such as glass, can also be transported on this belt. Finally, material which on account of its high temperature, cannot be economically handled on belts of rubber or balata, can be handled on the steel belt.

WHAT IS YOUR LIFE WORTH?

If you are a salaried man, you are earning, by the exercise of your brain or muscle, say $3,000 a year, at least one-half of which you employ in the support of your family. Then the money producing value of your life to your family is worth $30,000, since a policy of $30,000, when realized, will yield a sum which if invested at five per cent. would give your family $1,500 income a year. Is your life insured for anything like its full value?

Happiness is a perfume that you cannot pour on others without getting a few drops on yourself.

Waterglass as Adhesive for Paperboard

In a contribution to the review section of the *Journal of the Society of Chemical Industry* for September 30 1922, Rex Furness describes the properties of sodium silicate (waterglass) as an adhesive. He says that commercial sodium silicate possesses all the essential properties of an efficient adhesive, viz. (1) ease, suitability, flexibility, and general efficiency of application to the materials to be united; and (2) power of "setting" in a suitable manner and time with the formation of a bond of desired strength.

(1) The physical characteristics of a sodium silicate solution can be predetermined by the manufacturer so that it will penetrate into the surface pores or irregularities, whether these be of large or microscopic dimensions, of the materials to be united, without saturating or passing through such materials; in other words, its viscosity can be so adjusted that it is neither too thick nor too thin for a required purpose. The surface phenomena exhibited between silicate solutions and the various materials which may be united with its aid are not well understood, nor is the reason why a bond is formed at all, (this applies to adhesives in general, since the precise physical or chemical property upon which adhesion depends is not definitely known); it must, therefore, suffice to state in this place that silicate solutions will "wet" the surfaces of such substances as paper and paper products, wood and abrasive materials.

(2) The setting of a silicate adhesive may result from cooling, or from the evaporation or absorption of water, or from all these causes combined. A smaller abstraction of water is needed from concentrated silicate solutions than from many animal and vegetable glues, so that the speed of setting can be greatly increased, and with it the speed of the particular machine upon which the work is being effected. The bond is permanent and is not disturbed by warmth as in the case of certain adhesives. The bond strength is perhaps not so high as that of animal glue, but it is superior to that of most other adhesives, and, what is far more important, the minimum bond is greater than the tearing strength of the materials with which it is used.

Advantages of Silicate Adhesives

Silicate adhesives may be prepared with any desired viscosity and setting time, and their composition can be varied to enable articles made with their aid to withstand any particular conditions of temperature and humidity. These adhesives do not putrefy or decay, they are immune from any form of bacterial activity, and they repel vermin. They are fireproof, and although not absolutely resistant to water the materials manufactured with their aid are damp-proof. The fact that they are odorless is of especial importance in the manufacture of built-up paper-board and corrugated containers for food products.

Again, silicate adhesives are cheap, both relatively as to the quantity required for uniting materials and absolutely. These facts, taken in conjunction with the important point that they are perhaps the easiest to use, as they do not require the application of heat, and may thus be kept ready for immediate use, must be regarded as constituting very substantial claims.

Let us compare briefly some of the above-mentioned properties of silicate adhesives with those of animal and vegetable products. Animal glue, for instance, is liable to deteriorate if not kept dry. Its solutions must contain disinfectants in order to prevent mould growth, and they are by no means odorless. Batches of glue solution must be freshly made at frequent intervals; and this adhesive is much more troblesome to apply than silicate adhesives, which are almost always applied cold and in the state in which they are received from the manufacturers. The organic constitution of glue and other popular adhesives renders them combustible, putrescible, and attractive to vermin.

Casein adhesives are troublesome in use as compared with the always available silicate solution, and in addition casein glues must be used very soon after the solution has been made. Even the patented and special types have a hardening period of a few hours only, and casein glues in general, like animal or gelatin glues, cannot be relied upon to afford constant and uniformly reproducible batches. Many influences have been traced which affect casein and render such irregularity inevitable. Silicate adhesives of a specified quality and composition can always be relied upon to give constant results, provided temperature, humidity of the workroom, and other variable factors are controlled. Starch and dextrin adhesives are relatively weak in bonding strength, and in spite of the numerous special and patented "modified" starch adhesives, they are troublesome to prepare for use.

Sodium Silicate Solutions

The large variety of silicate solutions has rendered possible their use in many manufactures. Thus, the built-up paper-board industry finds no better adhesive; the facing or lining of corrugated paper or board, the production of multi-ply veneer, the manufacture of "mandrel" paper articles for food containers, etc., the employment of silicate as a sealing agent for packages, cartons, etc., the binding of artificial or natural abrasives in the making of abrasive wheels, and so forth, may be cited as examples of the use of silicate adhesives.

It will be obvious that one definite adhesive solution cannot serve for more than a limited number of purposes. The great merit of silicate is that it can be made into a large number of solutions of varying viscosity, stickiness, etc., and the composition of the "silicate" itself (the word "silicate" covers a wide field in commerce) can be modified so as to confer almost any desired physical state upon its solutions. To gain an insight into the basis of this wide range of properties, some account must be given of the variations possible in the constitution of silicate glass itself, and of the inter-relations of its solutions.

Sodium Silicate and its Colloidal Solutions

Although the chemical compound of Na_2SiO Aq. can be isolated as a crystalline solid, it has little or no interest in the manufacturer or user of sodium silicate, since in solution it possesses none of those physical properties upon which most of the applications of "silicate" depend. The sodium silicate of commerce may be said, broadly, to consist of a colloidal solution of silica in Na_2O,SiO_2 or $Na_2O,2SiO_2$ (or both). Although not extensively applied in industry, the yellow and green silicate "glasses" are well-known to the chemist—the colors being due to iron compounds in the ferric and ferrous state respectively. The ordinary "water glass" of commerce is obtained from these "glasses" by dissolving them in water, allowing the aluminous and ferrous impurities to settle out, and evaporating the solution.

The ratio of sodium oxide to silica in commercial silicate solutions is usually calculated from percentage compositions, and is not expressed molecularly; it varies from about 1 : 1.5 to 1 : 4. Many changes occur as the proportion of alkali increases; the total possible solid content increases greatly, the solution becomes heavier, and the viscosity at a given specific gravity diminishes. To take the case of two silicate solutions in which the ratios are approximately 1 : 1.5 and 1 : 4, respectively. At a constant gravity, say about 70° Tw., the more alkaline silicate is a thin liquid, easily poured, whilst the product high in silica is jelly-like and stiff. Conversely, to obtain both silica solutions in an approximately similar state of viscosity, the alkaline product must be concentrated to almost twice the above gravity.

At this commercial limiting concentration, there are differences in the physical properties of the two types of silicate solutions. The product high in silica is jelly-like, and can be moulded to some extent, but the highly alkaline silicate is a viscous and sticky liquid, which can be drawn into threads, and which easily absorbs water from the atmosphere, so that it "dries" badly in use.

Between these two chosen extremes of alkali-silica ratio lie the silicates of commerce, and it will be appreciated that all grades of viscosity, stickiness, setting time—dependent upon ease of "drying"—and total content of solids can be produced by altering the alkali-silica ratio, and working the gravity in correlation.

The facts may be summed up as follows: (1) When the specific gravity of the solution is kept constant, the viscosity and alkali content vary inversely; (2) if the viscosity be kept constant, the gravity and alkalinity vary directly.

Examples of solutions from large shipments may be quoted to illustrate this point:—

Gravity (°Tw.).	Ratio Na_2O :SiO_2	Viscosity (at 20° C.).
(1) 85	1 : 3.26	21.9 C.G.S. units.
(2) 87.7	1 : 3.16	10.8 C.G.S. units.
(1) 71.6	1 : 3.53	3.1 C.G.S. units.
(2) 71.96	1 : 3.48	1.7 C.G.S. units.

Although the gravity is not quite constant in either of the two cases shown, it increases from (1) to (2) and should therefore, of itself, tend to *increase* the viscosity. Limits are, however, set to the indiscriminate extension of these variations. Thus, if the alkalinity of the solution be too high, a very slow-drying water absorbent silicate results; and there are other objections which will be discussed later.

Broadly speaking, the viscosity and stickiness of a silicate solution can be arranged by the producer so that it will fulfil all requirements from an adhesive standpoint and possess no disadvantageous qualities.

The Alkalinity of Silicate

Such an alkalinity as is represented by a 1 : 1.5 ratio would lead to discoloration of the paper or wood products with which silicate is chiefly used as an adhesive. Many paper-board articles, *e. g.*, food containers, are covered with a facing paper or label printed in colors. Now many colors are affected by alkali and labels printed in such dyes or inks become discolored after long contact with a package of which the material has been built up with the aid of silicate adhesives of high alkali content. Paper tubes, made from mechanical woodpulp stock are "stuck" in the course of making by means of silicate, and if this is too alkaline, a yellow color develops at the overlap. Further discussion of the effects of alkali in highly alkaline silicate solutions is unnecessary, as it has been stated that the chief use of silicate as an adhesive is for paper and wood products, which are readily susceptible to alkali attack. It should, however, be pointed out that other factors influence staining, and that a thin "neutral" silicate will stain a white board more than a thick highly alkaline product, facility of surface absorption and penetration having to be considered.

No one realizes the significance of alkali content more than the manufacturer of silicate, for this reason silicates are not made with a high alkali content, and if the user will employ the adhesive as sparingly as possible—which is not difficult, as silicate spreads easily—no staining need be feared.

Labels printed in alkali-destructible colors have been successfully pasted on to containers with the aid of silicate of low alkali content, the labels being reasonably thick and not spread too thickly with the adhesive. In general, however, dyes affected by alkali should not be used in labels or colored outside wrappings which are to be affixed by means of silicate.

Excessive alkali in a silicate adhesive tends to make the material with which it is used somewhat hygroscopic, and to render it very "slow" on the machine, *e. g.*, in paper-board manufcture. An alkaline silicate can be made sticky enough to cause edges to adhere after a short contact. Hence a balance must be struck between the various desirable qualities; in this way only can an article be produced which is sufficietly viscous and sticky, which has a convenient drying and setting rate, and whose alkali content is as low as is consistent with the realization of the other essentials.

Applications of Silicate Adhesives

Built-up paper-board, box-board, container-board and the like are made by uniting several sheets of paper-stock, not in themselves thick or strong enough for use in making packages, food containers, etc. A four-ply board is a common article of manufacture, and is made by uniting two "inners" of cheap mechanical woodpulp stock or chip stock, with two "outers" of a suitably (resin) sized manila or jute stock. The "inners" are, say, 23 to 30 "points" in thickness —a point represents a thousandth of an inch— whilst the "outers" range from 4 to 8 "points" in thickness. Silicate is applied by suitable spreading rollers to the "inners" only, the machine positions the "outers," and the potential board passes to pressure rollers, where the union is completed. A good adhesive has dried at this stage, so that the completed board can pass on immediately to the cutters and trimmers. The edges of the board do not become loose, and the loss by cutting and trimming is only a few per cent. even with the machine running at, say 100 ft. per minute. A consumption of 35 to 40 lb. of silicate per 1,000 sq. ft. of board made is a normal usage.

Several factors influence the efficiency of the machine, and of these temperature, humidity and quality of stock may be noted. In some factories the temperature is kept uniform by artificial means. It is obviously possible to use heated silicate adhesive, so that after application to the stock, the union takes place both by cooling—the silicate becoming more viscous—and by increased evaporation of the water. The stock should absorb the silicate as uniformly as possible, for if the "inners" are relatively more porous, it will be necessary to overload them in order to leave enough adhesive to make the bond with the uncoated "outers."

The production of wall-board, book-bindings, clothboard and in fact all kinds of built-up products made of wood or paper stock, requires no elaborate consideration, but it may be noted that mandrel-made articles—spiral or lap wound—are produced with silicate adhesives. The making of cylinders from plane sheets of strong board—the cylinders afterwards being cut into suitable sizes for food containers—presents difficulties which can be overcome. Thus, the "spring" of the board demands that a good "hold" at the overlap be quickly attained, otherwise the rate of manufacture is lowered. The alkali content of the adhesive must be watched, so that staining of the board shall not result, and, as above noted, the balance is struck between the various essentials.

Corrugated or crimped paper or board is often made into a three-or five-ply product. Thus, the latter consists of two corrugated sheets with a central, an outer and an inner liner or facing of suitable paper. This is affixed by smearing the tips of the ridges with silicate and pressing the liners upon them. The same qualities in the adhesive are again demanded, and the output of the machines is regulated by the speed of drying, the completion of the bond, etc. Silicates with 8.8 to 9.3 per cent of sodium oxide and 28 to 29 per cent of silica (76-81° Tw.), are found suitable but a compound with as much as 11 per cent of sodium oxide has been tried; such silicates, however, are not as yet in general use.

The adhesives used in the production of built-up wood-boards—veneers—are casein, alkaline starch glue, etc., but silicate is finding increased application. A thinner silicate can be employed, since pressure is applied for some time after building up the composite product. A silicate of about 55° Tw., with a relatively low alkali content, is preferable. "Fillers" may be added

As a final example, the bonding of natural or artificial abrasives for the manufacture of abrasive wheels may be indicated. A mixture of abrasive, clay, and silicate is moulded and subsequently baked. A strong bond is formed, possibly by interaction between the alkaline silicate and the aluminium hydrosilicate of the clay. Occasionally there is interaction between the alkaline silicate and silicon carbide abrasive employed, but the addition of potassium permanganate, which reacts with the hydrogen otherwise evolved, has been claimed to prevent imperfections caused by liberated gas. Silicate adhesive is largely employed in abrasive-wheel manufacture, but dry silicate "glass" is perhaps more suitable than the solution, the "glass" being employed in the dry process of wheel construction.

TEN YEARS OF THE MELLON INSTITUTE

The Pulp and Paper Magazine is in receipt of the 10th Annual Report on the Industrial Fellowship of the Mellon Institute of Industrial Research which has been in successful and increasing operation at Pittsburg for a decade. It speaks well indeed for the foresight and the organizing ability of Dr. Robert Kennedy Duncan that the work he started has furnished so significant a contribution to the research work and the industrial improvement of the past ten years. Dr. Duncan had already formulated and put in preliminary operation the industrial fellowship system as far back as 1906, but it was not until March 1913 that Andrew William Mellon, now secretary of the Treasury of the United States, and Richard Beatty Mellon established the Institute on a permanent basis and it has flourished ever since. Outside of the distinct and unquestioned contributions that this Institute and its work have made to industrial activity in the United States, there has been a no less important contribution to industry in the form of successful and friendly co-operation in the attacking and solving of mutual problems. The idea of competitors in any field getting together for co-operative work of this kind was quite new when Dr. Duncan established the Institute, but it has now become quite a common feature of industrial life on this continent, although earlier examples can be found in the experience of British industries. It is interesting to note that a Canadian University is represented among the holders of industrial fellowships at the Mellon Institute and that several of the problems being studied have to do with the pulp and paper industry.

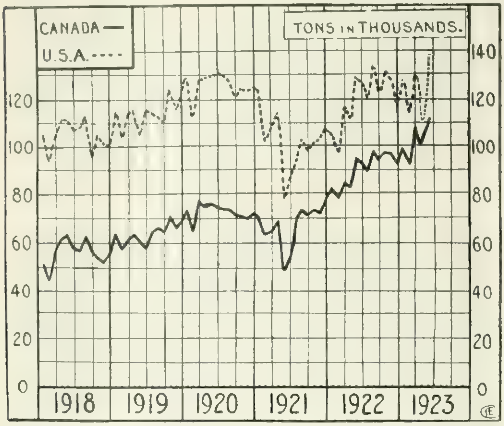
BUSINESS HOLDING UP

Mr. James W. Sewall of Old Town, Maine and Washington, D. C., whose business of timber cruising, mapping, and land appraisal usually reflects the condition of the lumber and pulpwood trade, reports the highest activity in his work since 1917.

From his northern office Mr. Sewall has crews at work, not only in Maine, but in Vermont, Ontario, Quebec and Nova Scotia. His organization has looked over about a million and a half acres so far this year, and new work is coming in every week, with no present signs of any let up. Mr. Sewall feels that this augurs well for at least the immediate future.

NEWSPRINT PRODUCTION IN MAY

The Canadian Pulp and Paper Association reports that Canadian and United States newsprint mills made new high records for production in May, the production in Canada being 112,135 tons, compared with a previous high figure of 106,361 tons in March, 1923, and the United States production being 138,868 tons, compared with the previous record of 133,236 tons in August, 1922.



Total production for the month was 251,003 tons, compared with 217,461 tons in April, and with 224,452 tons in May 1922.

For the first five months of the year production figures were as follows: —

5 M'ths.	Canada.	U.S.A.	Total Tons.
1923	510,970	626,944	1,137,914
1922	423,918	562,912	986,830
1921	319,273	528,678	847,951
1920	367,934	629,244	997,178

Canadian production for the first five months of the current year was 20 per cent greater than in the corresponding period of 1922, and 39 per cent greater than in 1920.

United States production was 11 per cent greater than in 1922, but was a little less than in 1920, the previous "peak" year.

The monthly average production of Canadian Mills up to the end of May, 1923, was 102,194 tons, against a monthly average of 84,784 tons for the corresponding five months of 1922.

HAMMERMILL PAPER CO. ESTABLISHES FELLOWSHIP AT N.Y. FORESTRY COLLEGE

The Hammermill Paper Co., through their Chemical Director Dr. Bjarne Johnsen, have offered to the trustees of the New York State College of Forestry a fellowship for the coming year (September 1923-1924) to be known as the "Hammermill Fellowship in Pulp and Paper Manufacturing."

The fellowship requires that the recipient be a graduate student at the College (his work leading to the degree of M.S.). His major problem, which is to be chosen jointly by the Hammermill Company and the Department of Forest Chemistry, is to be a fundamental one — and he is to receive $1,200.00 during the year of his candidacy.

Mr. Burton L. Kassing, 105 Grove Place, Utica, N.Y., member of the graduating class, has been designated by the company and the college as the recipient of this signal honor.

This is the second grant received by the College during the last month. Charles Lathrop Pack, President of the American Tree Association and publisher of the *Nature Magazine,* established the Charles Lathrop Pack Foundation which consists of a $1,000 bond bearing interest at five per cent, the proceeds being given each year to the student who submits the best thesis on the interpretation of forest policies to the public or from the public viewpoint—the principal idea being to bring the message of forestry and the necessity for scientific forestry in this country before the people.

THE FOREMAN'S DUTIES

The choice of a foreman is extremely important because of the immense power of that officer to affect the affairs of the works for better for worse. Although the post is not one of very high rank it joins up the activities of the two great branches of a factory; the devising and directing, and the actual producing. It is on the effective co-operation of these two functions that success depends and, consequently, the position of the foreman is a much more important one than appears to be generally admitted. If the foreman chosen is a strongly practical man and a good disciplinarian that is all to the good, but if he is of such a temperament that he opposes all innovations he will not be a success from the point of view of the management. Yet this is, too frequently, what happens. The opposition of the foreman to the new ideas originating from "above" is seldom open but, nevertheless, it exists. The men soon discover this and act in concert to abet their foreman in resisting innovations against which they, too, are prejudiced. The foreman may be got to acquiesce in the introduction of something new, but mere acquiescence is of comparatively little use. What is required is intelligence to perceive the new conception and ability to introduce it into the department; for in all such matters the foreman is the only effective go-between for introducing the ideas of the management to the men. It is as though the workmen spoke one language and the management another, the foreman being the necessary interpreter.

It follows, then, that the foreman must be capable of analyzing two different types of expension for, not only must he introduce the ideas of the management to the shop, but he must interpret the objections of the shop to the management. In many cases it happens that the management explains a proposal to the foreman; the foreman knows instinctively, from his lifelong connection with the shop, that the proposal will not work; yet he cannot say why, and, consequently, offers a kind of grudging acceptance, which is of no use either to himself or to the management. What is required in this connection is a more analytical type of mind in the foreman. This, however, is seldom found in connection with the trade knowledge and powers of control also required for the post. — Engineering (London.)

It is well in all the trials of life to hope for the best, but to be prepared for the worst.

PULP AND PAPER NEWS

At the plant of the Abitibi Power & Paper Company, Limited, Iroquois Falls, Ont., last week the record time of 1 hour and fifty minutes for putting on a Fourdrinier wire, which was made some two or three years ago on No. 3 machine, was broken when the paper on No. 5 machine was on the reel just 1 hour and 35 minutes after the stock left the old wire. During that time the wire was put on, cleaned, started, and felts washed, and the paper taken over the machine. The actual putting on of the wire took just one hour and ten minutes, the remaining time being occupied in starting up, completing the washing of felts and taking the paper over. The wire crew was in charge of Boss Machine Tender Frank Stoughton. The crew on shift were Machine Tender Morns and Backtender Faler who were, of course, assisted by a regular crew.

The tug Reliance, of the Spanish River Pulp and Paper Company, which foundered in Lake Superior last December off the coast of Lizard Island, was brought to Sault Ste. Marie, Ont., last week by the tug Favorite of the Great Lakes Towing and Dredging Company.

E. Newall, head of the Dominion Envelope and Carton Company, Limited, Toronto, has returned to that city after a business trip to England. It is understood that Mr. Newall was successful in making satisfactory financial arrangements for the erection of a board mill in the Toronto district and that active steps towards carrying out the enterprise will shortly be commenced.

O. H. Moore, general manager of Hinde & Dauch, paper board manufacturers, Toronto, has returned from an enjoyable holiday spent in the Adirondacks and along the Maine Coast.

David Robertson, general manager of the Canada Box Board Company, Montreal, called on the paper trade in Toronto last week.

E. Pullan, president of the big concern bearing his name in the Toronto rag and paper stock field, has gone on a pleasure trip by motor through northeast Michigan and will visit Chicago before returning.

A. T. Brown, of E. Pullan, waste paper dealer, Toronto, and Mrs. Brown, together with W. B. Christie, of Hinde & Dauch, and Mrs. Christie, have left on a motor trip through the Adironacks.

The many friends in the paper trade of H. C. Woods, manager of Warwick Brothers & Rutter, manufacturing stationers, Toronto, will be pleased to learn that he is very much improved in health. He left, in June, on a business trip to England where he will look over the stationery field for new ideas in that line.

Many friends in the Toronto paper trade were pleased last week to greet Mr. Robson, who some years ago was with the old Buntin Reid Company, but who now is representing the Edinboro firm of Andrew Whyte & Co. Mr. Robson has been in Canada for a few weeks in the interests of his firm and booked some orders for the company's paper lines.

George Wilson of Winnipeg, President of the Canadian Paper Trade Association, was a business visitor in Toronto last week.

Montreal visitors to Toronto during the week were J. B. Larkin, manager of the Federal Paper Company: H. C. McFarlane, of McFarlane, Son & Hodgson, Limited: T. Havill, of the Havill Paper Company and T. B. Little of T. B. Little & Co.

"One Hundred Years Ago" is the title of a folder issued by the Canadian Export Paper Company, Limited. The first page, printed in three colors, gives a view of Trinity Rock, Saguenay River P. Q., and the second cuts of William Price, the founders of Price Bros. Limited, and of John Saxton, founder of the "Canton Repository." A reprint of the first edition of this paper is enclosed in the folder. A brief history of William Price in relation to the development of the lumber resources of the Province of Quebec, is also given. Mr. Price commenced operations on the St. Maurice River and the South shore of the St. Lawrence and extended his activities into the north by way of the Saguenay, where he became a leader in developing the forest lands.

The quarterly meeting of the Typothetae of America was held in Montreal on July 6, under the presidency of Mr. J. R. Henderson. Master printers from Montreal, Ottawa Toronto and Hamilton were present. The meeting discussed the sales tax and the best method of estimating costs.

By decision of Hon. Honore Mercier, Minister of Lands and Forests, the forest rangers' school which was created at the last session of the Legislature, will open on the 11th of September next at the Berthierville Government nursery under the direction of Henry Roy, forestry engineer.

The object in view is to form experts in dealing with forest fires, and generally with forest protection, and the school, to a certain extent, will be preliminary to the forestry school now operated under the auspices of Laval University in Quebec. The courses will be given in French and English and already applications have been received from 30 candidates for admission to the school showing the interest taken by forestry men, and by a number of large lumber firms, which are anxious to obtain the service of experts.

Last week a large number of representatives of paper companies visited Montreal and attended meetings of sections of the Canadian Pulp and Paper Association. Five meetings were held—the book and writing section, kraft service bureau, board section, coated book section, with a general conference of the Canadian Paper Trade Association.

The visitors included Messrs. H. F. E. Kent, Kinleith Paper Mills, Limited, St. Catharines, Ont; R. N. Finlay, United Paper Mills, Limited, Toronto; H. B. Donovan, Canada Paper Company, Limited, Toronto; I. H. Weldon, Provincial Paper Mills, Limited, Toronto, John Martin, John Martin Paper Company Limited, Winnipeg; John F. Taylor, E. B. Eddy Company Limited, Hull; George Wilson, Clark Bros & Co., Limited, Winnipeg; K. S. Maclachan, Lincoln Mills, Limited, Merritton, G. C. Winslow, Lincoln Mills, Limited, Merritton; T. Dickinson, Brown Bros. Limited, Toronto; F. H. Gage, Kinleith Paper Mills, Limited, St. Catharines, George Pauline, Ritchie & Ramsay Limited, Toronto.

Mr. I. H. Weldon was entertained at luncheon at the Ritz-Carlton Hotel on July 5, by the book and writing section, prior to leaving for England.

Mr. George Pauline has also left for a visit to the Old Country.

U. S. PAPER MEN ON CANADA'S PULP BAR.

New York—Commenting upon the action of the Canadian Houses of Parliament limiting pulp exports from Canada, American pulp and paper men generally are disposed to complain that the immediate effect of such a law will be to boost the price of American paper $10 a ton. The legislation is viewed in some quarters as an attempt to give Canadian labor the wages now earned in the United States by making the pulp into finished paper. That, it is said, will close many American paper mills, throwing thousands of mill operatives out of work. Although the pulpwood exported from Canada is only 20 per cent. of the United States' supply, it is held that this 20 per cent. is the controlling factor in the market, and its elimination would result in an abrupt skyrocketing of prices.

While formal action is withheld pending the consummation of the embargo legislation, officials of the United States Tariff Board are understood to be watching the situation with particular interest, and already discussion is centred in the steps which could be taken to bring about a nullification of the step.

Prospects of an interchange with the Canadian Government, with the possible development of tariff retaliation on her imports of coal and other necessities are looked for. Such steps as may be undertaken by the United States however, will be held in abeyance until the new Canadian legislation becomes a definite law through the affixing of the Governor-General's signature, but it is the confident belief that such a step will be followed almost immediately by a protest from American paper manufacturers, which will be given formal recognition by both the State Department and the Tariff Board.

The embargo, if carried out, is not likely to affect the International Paper Company as seriously as other American newsprint mills, due to its extensive woodland holdings in the United States. Asked what the International would do in case the embargo becomes effective, and the Canadian newsprint mills are enabled to control the American market, President Philip T. Dodge said, "If we are not allowed to do business profitably, we will turn to other grades of paper which can be produced at a profit, and we will sell current from our water power developments."

A strong telegram has been sent to the Secretary of State by Representative Luther W. Mott, Watertown, N. Y., urging the filing of a protest with the Canadian Government. Mr. Mott pointed out in his wire to Secretary Hughes that, should the proposed embargo become effective, many mills in Northern New York which now depend almost entirely for their operation upon Canadian pulpwood would be forced to close and thousands of their employes thrown out of work. This is particularly true, he said, since pulpwood from Crown lands in Canada has been prohibited from export since 1910. Congressman Mott told Mr. Hughes that should the resolution be passed hostile feeling was sure to result on this side of the border. The congressman said that he intended to take the matter up with the United States Senator, J. W. Wadsworth.

DEVELOPMENT SCHEME IN LAKE ST. JOHN DISTRICT

In our last issue we printed the impressions of a visitor to the Lake St. John, P. Q., district, where the Quebec Development Company is carrying out a vast development scheme which will have an important bearing on the pulp and paper industry. A party of those interested in that work and also in the pulp and paper industry recently inspected the work. The party consisted of Messrs. J. Leonard Apedaile, managing director of Price Brothers & Company., F. R. Thorne, manager of the paper sales department of that firm; R. Crooker, Canadian Export Paper Company, Limited; A. L. Dawe, Canadian Export Paper Company Limited, and C. R. Van de Carr, Laurentide Company, Limited. Starting from Quebec by boat, the party was met at St. Alphonse by Mr. G. W. Mitchell, in charge of the operations at Kenogami, and Mr. R. Greig, superintendent of Price Brothers paper mills at Kenogami. The party motored to Chicoutimi, where the members were welcomed by Mr. M. R. Kane, Manager of the Woodlands Department, and Mr. E. J. Flynn, comptroller at Chicoutimi. After an inspection of the new power dam at Chicoutimi, the party continued to Jonquiere, where it was joined by Mr. Arthur Price. The Price Bros. mill was inspected, the visitors also looking over the extension, which when completed will nearly double the capacity of the plant. The foundations are practically completed and the moulds for the concrete superstructure well advanced.

From Jonquiere the party motored to Lake Kenogami, and witnessed part of the work being carried out by the Provincial Government to transform the Lake into a storage basin. At St. Joseph D'Alma the party was joined by Mr. Marshall Ball, superintendent of the Jonquiere Paper Mill. The journey was then made to the scene of the power development at the Grand Discharge of the Saguenay. A 12 mile line is now being completed from Hebertville on the C.N.R. which will permit of the heavy equipment being transported.

The fork of the Grand and Little Discharges of the Saguenay form the Island of Alma on which the construction camp is situated and that the smaller Ile Maligne is formed by a similar forking of the Grand Discharge itself. The main dam for the development of power is to be situated on the larger branch of this latter fork, just above its confluence with the lesser branch and a secondary dam for retention purposes will later be constructed across the lesser branch at the upper end of Ile Maligne.

The rail line from Hebertville is expected to be ready for operation in another month or six weeks, but the exact time depends upon the completion of a bridge across the lesser branch of the Grand Discharge on the site of the main dam. This bridge is 400 feet in length, with double track width, and two piers and as many abutments of concrete construction are in place, ready for the steel work which is to commence immediately. An important feature of the rail line is another bridge across the Little Discharge, 650 feet long and having eight spans, which is already finished.

In order to permit of work upon the main dam, the waters of the larger branch of the Grand Discharge have been placed under control by means of a cofferdam, the largest of its type ever built with the result that the full force of the stream has been diverted for the time being into the lesser branch. The main dam, in which will be situated the power house, will rise more than 100 feet from its foundations and will have the effect of elevating the waters of Lake St. John some 23 feet above their normal level. This means, that they will be permanently maintained at their average spring-flood level. The level of the Saguenay River will however, remain undisturbed.

INSTITUTE ITEMS

WHAT MUST I DO TO MAKE GOOD?

Several years ago the Director of Publications of the LaSalle Extension University, of Chicago, propounded the following question of Dean Thomas A. Clark of the University of Illinois:

"Suppose a young man, ambitious and really in earnest, came to you and asked for five minutes of your time that you might express to him in the fullness of your thought and experience, an answer to the eternal question of the young man 'What must I do to make good?" If you believed the young man to be sincere in his desire to secure and use helpful advice, what would you tell him?"

For the benefit of those who may never have heard of Dean Clark and his work, the following may be said about him: Thomas A. Clark was the first Dean of Men in the country, and he has been working with undergraduate problems at the University of Illinois for more than twenty years. His phenomenal success as a disciplinary officer has been due to his clear-sighted knowledge of youthful human nature and to his regular personal contact with thousands of students. Having seen generations of students succeed or fail, he knows perhaps better than any other man in the country the elements that contribute to success or failure in college. The same elements may be applied to almost any young man, whether he is a college student or one of the less fortunate, just starting out on Life's broad highway.

The article printed below is Mr. Clark's answer to the question asked him — "What must I do to make good?" The article is copied from the Personal Efficiency magazine, published by the LaSalle Extension University. Read over the answer carefully, and see if you cannot pick out some things which may be made good use of in YOUR efforts to "make good."—The Editor of *Mead Co-operation.*

"What would I say, I am asked, to a young man, ambitious and in earnest, who should come to me and ask me in five minutes to answer the question, "What must I do to make good?"

I do not now recall many of the specific things I learned in college, but that matters little, for it was in the learning that my mental development came, but I do remember one thing impressed upon me by an instructor whose influence I count among the most helpful I have ever known. "You can buy anything from the gods," he used to say, "if you are willing to pay the price."

And what is the price of success? I have watched the progress and the development of a good many thousands of young men since I entered college more than thirty years ago, and I have seen not a few of them succeed. I believe I know the answer.

It goes without saying, that if a man is going into any business or profession that his chances of success are dependent pretty directly upon the character and extent of his education and his preliminary training. No matter how old he is a man should give himself the most thorough theoretical education within his reach before entering upon any business or profession To do otherwise is to handicap himself for life.

No man is likely to succeed in any business or profession who is not willing to work hard. Most young fellows do not object seriously to hard work if it is something they like or that they find interesting or easy of accomplishment. The straight level paved road they make no objection to, but when they strike a muddy hill where they must bend every effort to the load, they hang back. The task that is difficult, or unpleasant, or uninteresting, they shrink from. If success means continuous hard work, they are often unwilling to pay the price.

I have just finished reading the autobiography of Andrew Carnegie, and I found it an intensely interesting narrative. Few will doubt that Mr. Carnegie succeeded, for he was a great man as well as a wealthy one, but the strongest impression the book makes on me is the recollection of how persistent, how tireless, how faithful he was in the performance of any work assigned to him. He never spared himself, he never complained at working overtime, he never thought any task too hard of accomplishment, and his point of view in this regard has been quite general in all men whom I have known to succeed.

If a man would make good, he must have character. Shrewdness, unscrupulousness, trickery, may easily win for a time, but in the end a man will not get far unless he is honest, dependable, and trustworthy. Not long ago I asked a prominent man at the head of the financial affairs of one of the largest manufacturing corporations in the state of Illinois how he came to be in his present position.

"I have one quality," he said, "which has put me and kept me where I am. I am absolutely honest. My word can be depended upon."

Persistence, determination, backbone are necessary to success. The man who changes his purposes at every cross road seldom succeeds. One must stick to a job until it is finished. If he makes a plan he must carry it to completion. Success does not always come quickly, but it comes surely if we plug away.

One of the most honest, hard-working, and intelligent men I have ever known is seventy years old now, and he has reached nowhere. And the reason is that he has stuck to nothing. He has lived in a dozen states, he has taken up as many different lines of work, but every time he has shifted from one thing to another he has lost ground, and in a certain sense he has lost confidence in himself until it is too late for him to arrive.

And this leads me to another point. A man must believe in himself if he would succeed; he must have confidence in his own ability to solve a difficult problem, to finish a task, to do a job or work that he has perhaps never done before or perhaps that nobody has ever done before. He must be willing to take responsibility and to do whatever comes to his hand whether it seems exactly his job or not, for in doing this he will make himself a man whose place it will be difficult to fill.

Lack of Safety is Lack of Sanity.
Knowledge of Danger is the First Step to Safety.

A Safeguard on Machinery prevents accidents.
Let us also put a Safeguard on our actions.

UNITED STATES NOTES

According to a Treasury decision announced last week, entries of Canadian pulpboard in rolls for use in the manufacture of wallboard, which have been liquidated on the basis of the Canadian rate of 25 per cent ad valorem, may be reliquidated at the rate of 5 per cent. ad valorem under paragraph 1402 of the Fordney-McCumber tariff act with a refunding of the excess duty. This ruling amends a decision of Feb. 2 of the present year, in which it was stated that the Canadian rate of duty on the kind of pulpboard mentioned was 25 per cent prior to January 15, 1923. The decision says that the Canadian Minister of Customs and Excise has stated that there is no record of any importation from September 21, 1922, on the midnight of which the present tariff act went into effect, to January 15 of the present year, of the pulpboard in question and that had there been the material would have been admitted free of duty into Canada, or had there been a duty assessed it would have been no higher than 5 per cent.

Mrs. Frederick G. Crane, widow of the late Mr. Crane, head of the Crane family, paper manufacturers of Dalton, has made gifts of $25,000 each to the Massachusetts Agricultural College, Phillips Academy at Andover and the House of Mercy Hospital at Pittsfield. Mr. Crane made no public bequests in his will, but his family is now carrying out his wishes in that regard.

Expenditure of $716,724 of Forest Road funds for construction work in Colorado and Idaho has been approved by Secretary of Agriculture Wallace.

The Board of Directors of the International Paper Company have declared a regular quarterly dividend of one and one-half per cent. on the preferred capital stock of the Company, payable July 16 to preferred stockholders of record at the close of business July 6th.

Exports of paper and paper products during May, according to figures compiled by the Department of Commerce, made a very good showing. Their total value was but $7,000 short of the figure for March, which has so far been the high water mark for the present year. Paperboard, strawboard and the unspecified group showed decided increases in value and tonnage, as compared with the preceding month. Book paper registered an increase in value and also in tonnage. Newsprint declined both in quantity and value, as compared with last year, but showed a slight improvement over April of this year. Wrapping paper and writings made an unfavorable showing.

The Forest Service, Department of Agriculture has two large timber sales pending. One of these involves about 2,000,000,000 board feet of pulpwood in Alaska. Bids will be received on this by the district forester in Juneau up to July 31. The prospects that this timber will be sold and a pulp mill established are reported to be very good, the department states. The second sale pending involves about 121,000,000 board feet of the sugar and yellow pine type on the Plumas National Forest in California.

B. W. Scribner, chemist of the West Virginia Pulp and Paper Co., has been named by the Bureau of Standards as successor to F. A. Curtis, chief of the paper laboratory of the bureau. Mr. Curtis' resignation became effective July 1. Mr. Scribner will assume his new duties in Washington about the middle of this month.

Increase of 5 per cent. for standard newsprint paper and 7 per cent for total newsprint comparing May 1923 with May 1922, are shown in production statistics compiled by the Federal Trade Commission. The average price for the month in carload lots was $3,957 per cwt. Groundwood production, comparative statistics covering the same period, totalled in all grades 371,499 net tons in May, 1923, as against 331,694 net tons in 1922. This total exceeds all others for the month recorded since 1919. The total production of all paper in May, as compared with the same month of the previous year showed an increase of 69,054 tons, and a gain of 13,602 tons over May in the record year, 1920.

Following his return last week from a business trip to Canada, R. S. Kellogg, Secretary of the News Print Service Bureau, left for a tour of inspection through mills en route to Wisconsin, combining business with pleasure on a seven weeks' automobile jaunt on which he is being accompanied by Mrs. Kellogg.

Another sojourner in Wisconsin is Dr. Hugh P. Baker, executive secretary of the American Paper and Pulp Association, who is spending a two weeks' vacation in a Wisconsin camp.

Walter E. Lindell, Roy McCorkindale, Edward E. Bogart and William Turner, old employees, are conducting the mill supply business of Chase and Cooledge, Holyoke. Of the founders, Mr. Chase died several years ago, and Mr. Cooledge, who is long past the usual retirement age, decided to sell out to the men now in control, all of whom have served the firm for many years since its founding 50 years ago.

Three decisions, one in favor of W. R. Hearst, and one in affirmance of the Dexter Sulphite Pulp and Paper Company in the $3,500,000 suit brought by the latter against the publisher, were handed down a week ago in the Appellate Division of the Supreme Court, Rochester, N. Y. The suit is for recovery under a contract made by Hearst to purchase the company's mills and counter suit brought by Hearst to rescind the contract on the ground of fraud. Action of a lower court refusing a demurrer asking dismissal of the company's complaint in Jefferson County was upheld by the Appellate Justices. Hearst's attorneys are granted leave to file an answer to the company's suit within twenty days. The lower court was reversed in the matter of consolidating the publisher''s countersuit with the issue raised in the suit instituted by the company. It was ruled that the reversal must be tried in New York City. An order denying the company injunctive relief restraining Hearst from trying the New York counter suit until after determination of the Jefferson county action was affirmed.

A loss put at $200,000 was sustained in the fire recently which seriously crippled the sulphite mill of the Carthage Sulphite Pulp and Paper Company at Carthage, N. Y., and which for a time, also threatened the near-by plants of the National Paper Products Company and the Ryther and Pringle machine shops.

The mill following a shut down of several months, was in readiness to resume operations when the fire, whose origin is unknown, broke out. About 100 men had been engaged for work beginning July 2, and a daily output of 50 tons of pulp was anticipated. Until the directors of the company can meet it will not be decided whether to rebuild.

The Markets

CANADIAN TRADE CONDITIONS

Montreal July 10. The increased activity which characterized the local paper market during the last week of June has been maintained. While there is no rush, the volume of orders is on a satisfactory scale, taking into consideration this season of the year, when it is expected that sales will decline. The printing business is slow, and there are again complaints of excessive competition for the available orders.

From paper to agriculture seems a far cry, but as the latter is the most important of all Canadian industries, its prosperity or otherwise has a material bearing on all others. In the Province of Quebec, the season is backward, but with promises of generally fair crops, the hay crop will be a large one, and the condition of grain is favorable. Farmers, however, are not able to secure very remunerative prices for their cattle. In the agricultural districts collections are slow, and travellers state that retailers are not buying extensively.

The demand for newsprint is still good, but there is really no change in the situation. Should Australia and Canada conclude an agreement for a preferential tariff a stimulus will be given to our exports of newsprint to the Sister Dominion. Canadian mills have been out of the Australian market for some time, for two reasons — competition there is very keen and our mills are handicapped by the preference given to British goods, and besides that Canada has been able to find an outlet for her newsprint in the United States at prices which give a fair profit. With a preference however, our mills would no doubt make efforts to secure a portion of the business.

In the paper stock department, white rags are in good demand, with prices firm; waste paper is commanding a good sale at steady prices. The call for roofing felts is very good, orders coming in very freely. Some business has been refused on account of inability to fill them. Other lines indicate moderate activity with, however, no special features.

The pulp section is unchanged. There is no further news from Sweden, but it is recognized that if the trouble there continues for any length of time it is likely to cause a rise in pulp prices. Groundwood is again in good request at very firm prices, and with practically no surplus. Kraft maintains its value, while bleached sulphite is steady at unchanged quotations.

Imports into the United States of all classes of pulp show considerable increases this year, Canada securing a substantial share of the higher tonnage. For the four months of the year, up to the end of April mechanical pulp imported totalled to 3,382 tons, of which 72,263 tons came from Canada; in 1922 the total was 54,280 tons, Canada sending 47,710 tons. In unbleached sulphite this year the United States took 181,042 tons, 64,804 being of Canadian manufacture, while in 1922 we contributed 45,515 tons out of 1,264,444 tons. The imports of unbleached sulphate were 76,269 tons, of which Canada sent 46,849 tons; in the corresponding four months of last year the total was 75,646 tons, Canada contributing 46,018 tons of this amount.

ONTARIO MARKET NEWS

With many of the buyers away and the holiday season in full swing the Ontario pulp and paper trade is experiencing its usual summer dullness and in some quarters this is adjudged to be rather more pronounced than usual. It is pointed out that the paper jobbing trade had not recovered from several weeks of rather bad business when the holiday season came on and the two periods coming together has made a somewhat protracted season of backward business. Paper manufacturing also, with the exception of newsprint and book paper for the publishing trade, is somewhat lighter in volume at the present time than it has been for some time. For instance the concerns manufacturing box and other board are only running at about eighty per cent capacity. Enquiry among the manufacturing stationery firms reveals the fact that business at the best is very spotty and that there has been a falling off in the blank book business and in most lines of stationery. Some of these firms, however, are also engaged in book publishing and this branch is stated to be furnishing a fair volume of business. The envelope trade, which until a few weeks ago, was good, has fallen off and only a fair amount of paper is being used for envelope manufacture at the present time. For the most part these adverse conditions are taken to be seasonable. They are not confined to the paper trade but are touching practically every branch of industry. That the paper trade is sound basically it is generally agreed while the further conviction is held that following a brief period of more or less marking time the end of the holiday season will see greatly increased activity in all lines of paper.

There have been rumors of a drop in box board but this has not been officially announced as yet. There is a close relationship between the price of box board cuttings and the product itself and with a considerable drop in price of the former it is predicted that history will repeat itself and the price of box board drop also. It is a fact that the two usually go together. Box board cuttings to the mill are now quoted at $19.00 per ton. Purchasing agents in the box board industry say that things are shaping up for a fairly busy season but in the meantime the paper box trade is holding off buying in view of a possible drop in price of board. The paper box making trade has picked up slightly although some of the firms are still complaining of a shortage of orders in some lines of boxes.

Although for the most part prices on various paper lines are holding as yet, there have been one or two minor changes, the character of which hardly foreshadows any drastic changes. For instance Toronto jobbers were notified during the week by a couple of the paper manufacturing firms of a drop of one cent a pound in one line of bond paper and a raise of half a cent a pound in the prices of book and litho paper. These slight adjustments have followed the action of one or two of the mills taken a couple of weeks ago in withdrawing their price lists.

RAG AND PAPER STOCKS.— Waste paper dealers report a considerable falling off in collections but for all that there is no great demand for stock from the paper mills. The latter, while drawing on their present reserves, still appear to have some stock left and are not sending in any heavy requisitions to the collectors. Some of the book mills are stated to be handling fair quantities of waste paper. In the rag market there is a fair demand for cotton cuttings.

TISSUES AND TOILETS.— Some lines in tissues and toilets are showing satisfactory activity according to mill representatives. This is the season for specialty lines and there is a big movement in paper napkins, towels and other specialties. Plants are running practically full time. Standard lines of tissues, however, are rather quiet, although prices are holding firm and manufacturers are anticipating an early return to better business.

NEW YORK MARKETS

New York, July 7 — (Special Correspondence) — The latest Federal Trade Commission report, covering the month of May, shows that the paper manufacturing industry in the United States is not only in a far from dull position but that mills of the country operated in that month at far above normal capacity. Production of paper of all kinds in the U. S. in May totalled 659,025 net tons, which represents the largest single month's output in any month in more than a year and a half with the single exception of last January. Moreover, May paper production was something more than 116,000 net tons in excess of the average monthly output over the past five years, thus showing that the paper industry in this country was in May and probably still is in a very active position.

May production compares with 605,490 net tons produced in April this year, 442,601 tons (minus paper board and bag paper output) in March, 614,364 tons in February, and 664,537 tons in January, and also is contrasted with 589,971 net tons produced in May a year ago, 383,995 tons in two years ago, 645,413 tons in May three years ago, 480,171 tons in May four years ago, 538,416 tons in May five years ago, and an average monthly output over the last five years of 542,958 net tons.

Mill stocks of paper and board increased somewhat during May. At the beginning of that month mills of the country held a total of 231,381 net tons of paper of all kinds, whereas at the end of May stocks amounted to 245,872 net tons, showing a gain of about 14,000 net tons. Since production jumped more than 53,000 net tons over the April output, however, it will be seen that manufacturers shipped out the great bulk of their increased production during the month. Furthermore, mill stocks at the close of May were but slightly in excess of the average mill holdings of 230,217 net tons over the past five years.

All signs point to a very good movement of paper of most kinds into consuming channels. There is, of course, some lull in the demand at present, as is invariably the case at this season of the year. Consumers are not so willing to buy except to cover actual and immediate requirements during the summer, and manufacturers of paper obviously have experienced some recession in the call for their product. However, aggregately the movement thus far this summer probably has established a new high record of business in paper for this time of the year. The tremendous demand for newsprint, the consistently good consumption of book paper, the better than average demand for fine papers and for other grades serve to make a much livelier market than is ordinarily experienced at this season. Mills, it is true, have curtailed their operations to some extent during the past few weeks; this is the usual custom at the half-year mark when inventories must be compiled and when repairs are made to machinery, but indications are that. taken as a whole, the paper mills of the country are today working at a better rate of capacity than usually at this time of the year.

A strong market continues to prevail for newsprint. A little drop in consumption in the past few days has been noted, using the New York newspapers as a criterion. The department stores have let down in their display advertising to some extent, particularly in the Friday afternoon dailies owing to the closing of stores all day or half day on Saturdays, and it also has been noticeable that other advertising has decreased, so that publishers have cut down the number of pages printed in some issues. This is purely a seasonal condition, however, and no effect whatsoever is observable on the news print market. Prices rule firm and mills are shipping out their product regularly and are readily finding buyers for any surplus they have to dispose of.

Book papers continue fairly active and firm in price. Fine papers are in comparatively good demand; perhaps individual orders lack the volume of busier times but there is nevertheless a steady movement, and quotations are fully maintained. Coarse papers are in rather slow demand yet manufacturers are reported to be well fixed with back orders which keep them occupied.

Box boards are moving in a routine way and in normal amounts. Buyers are hesitant about ordering other than supplies directly needed but boards nevertheless are enjoying a fairly good demand. Prices have held steady this week at about $60 per ton for news board f. o. b. New York and $57.50 for plain chip.

GROUND WOOD.— The Federal Trade Commission's report on the wood pulp industry which shows that no less than 33,000 net tons more ground wood were produced in the United States in May than in April about explains the prevailing market position of this commodity. Grinders are operating on a larger scale at present than since last summer, and there is no doubting that mill stocks are accumulating, thereby creating some easiness in prices. However, it is customary for manufacturers to pile up a surplus of ground wood during the early summer to last them over the dry spell that develops later in the year, and while it is true there is some willingness shown at present to shade asked prices to secure orders, producers are not pressing matters and are maintaining market levels fairly well. Most domestic grinders want around $35 a ton at producing plants for prime spruce ground wood for prompt shipment, and it is stated that the bulk of current business is at about this price basis.

Ground wood production in May reached a total of 187,908 net tons. Mill stock increased during the month — from 86,924 net tons at the beginning of May to 126,234 tons at the end of the month — not quite 40,000 tons again.

CHEMICAL PULP.— Reports continue to tell of a limited demand from paper mills for chemical pulp. Consumers evince little disposition to buy other than pulp immediately required, and while a fair business of spotty character is transpiring, the volume of sales is small. The price tone holds steady. There are some sellers who apparently are granting slight concessions to secure orders but the tone nevertheless is steady and no concerted pressure is being exerted on the market by those on the selling side. Instead confidence among importers and dealers is quite pronounced, nearly all of them anticipating a livelier and higher market in the not distant future when paper makers commence to cover their fall requirements. A bullish factor is that there is not much pulp held unsold by sellers at present, importers in particular. Offerings by manufacturers in Scandinavia recently have been of limited tonnage owing to the scarcity of pulp there and the good demand from European consumers, and importers here probably have less stock on hand than in a long time, so that they can afford to be more or less independent with regard to prices.

No news has been received this week concerning the strike of workers in the Norwegian pulp and paper mills, and the strike is believed to still be in effect. Negotiations are proceeding but apparently the difficulty is not being smoothed over as quickly as it was thought at first it would be.

RAGS. A stiffening of prices on the low grades of papermaking rags, especially those used by roofing paper mills, has served to improve the tone of the market for all grades of rags. Dealers are firmer in their attitude and are generally holding out for the prices desired, and there is a distinct tendency noted in prices to advance. Roofing stock has sold this week at 1.40 cents a pound f. o. b. New York for No. 1 packing and 1.20 cents New York for the No. 2 grade, these prices representing a rise of between $3 and $4 a ton from the recent bottom levels touched by the market. Old white rags incline higher, as do thirds and blues. New cuttings are about steady though it appears that the recession in prices has been definitely checked, dealers being satisfied, it would seem, to wait out the market in expectation that demand from mills is about due to expand. There is a great deal of talk in the trade anent a scarcity of rags, the contention being that low prices have led to curtailment of collection and that incoming supplies from country sources do not begin to approximate normal quantities.

PAPER STOCK.— The market for old paper is gradually assuming a firmer undertone and prices at the moment display more steadiness than has been noted in several months. No actual advances of note have been recorded but most grades are fetching full current market levels and dealers seem altogether averse to accepting orders at cheaper prices. It is claimed that available supplies are light, the low prices recently obtaining having retarded collections considerably, and for this reason dealers are hesitant about entering selling engagements involving large amounts of material even when given the opportunity to do so.

Quotations on No. 1 hard white shavings range between 4 and 4.25 cents a pound f. o. b. New York, and on No. 1 soft white at from 3 cents upwards. Old magazines are quoted by New York dealers at 1.65 cents a pound f. o. b. this city for heavy No. 1 books though it is understood dealers in other parts of the country are asking much higher prices. Old kraft paper is firmly quoted at 2 cents a pound New York, ledger stock at 1.90 cents, and white blank news cuttings at 1.85 cents. Folded newspapers are selling at 82½ to 85 cents a hundred pounds f. o. b. New York, and No. 1 mixed paper at 70 to 75 cents.

OLD ROPE AND BAGGING.— Demand for old manila rope continues comparatively quiet. Some paper mills seem ready to buy rope at a price but they are not anxious for supplies and the prices bid frequently prevent business from going through. Dealers quote between 5.75 and 6 cents a pound at shipping points for No. 1 domestic manila rope, and importers want about the same prices for foreign manila rope. Old bagging is in slow demand and is quoted at 1.15 to

HANS LAGERLOEF, President and Treasurer
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WOOD PULP

SOLE AGENTS IN U. S. A., CANADA, MEXICO AND CUBA FOR

Finnish Cellulose Association
Helsingfors, Finland

AND

Finnish Wood Pulp Union
Helsingfors, Finland

1.25 cents a pound f. o. b. New York for No. 1 scrap burlap, and at 80 cents a hundred pounds New York for roofing bagging.

NEW ONTARIO INDUSTRY

The following item is a despatch from Toronto to a Montreal paper. The writer of it is evidently unaware of a very large and important kraft mill of the Dryden Pulp & Paper Co. at Dryden, Ont. The Pulp and Paper Magazine is glad to see further development of this branch of the industry.

With the letting of tenders over the week-end for tim ber cutting rights on 1,040 square miles of territory in the Sudbury and Algoma districts, a brand new industry is heralded for Northern Ontario. The Continental Wood Products Company, Limited, of Montreal and Elsas, Ont., is the concern which has accepted the Provincial Government's terms in the new venture of manufacturing kraft paper for wrapping and box-making purposes, and in the agreement they undertake to have a $1,500,000 pulp mill in operation by June 1, 1925 and they may later be called upon to construct a paper mill.

The limits disposed of are known as the Trout Mills-Chapleau pulpwood limits, and, according to the departmental statement, the prime object in the transaction is the establishment for the first time in Ontario's history of a kraft papermaking industry.

By contemplating someone better than ourselves, we can be inspired to grow like him.

TO THE MOSQUITO

(Genuine apologies to Barbauld)

Fly! I know not why thou art—
But know that thou and I must part:
And why on earth we ever met,
I own to me's a secret yet.
Fly! we've been too long together,
Through pleasant and through cloudy weather.
Tis time to part, my duty's clear,
I'll have to swat thee now, I fear;
For God's sake, go! I give thee warning.
Don't choose thy time:
Bid me GOOD NIGHT,—and in some other clime
Buzz thy GOOD MORNING.

J. C. M.

ITALIAN ARTIFICIAL SILK PRODUCTION

Italian production of artificial silk during the fiscal year ended June 30, 1922, approximated 2,500 metric tons, with a value estimated at 150,000,000 lire. Italy has four artificial-silk factories, employing about 10,000 workmen and having a capacity of more than 3,000 metric tons annually. Two new mills are soon to enter the field. About one-half of the entire Italian output of artificial silk is exported, which would make the annual consumption of Italy between 1,200 and 1,500 metric tons. Local demand is said to have tripled in the last 10 years, and the tendency is to increase still further. U. S. Commerce Reports.

Wood Pulp Trading Co., Ltd.

501 FIFTH AVENUE,

NEW YORK CITY

WOOD PULP AGENTS

Pulp and Paper Magazine
OF CANADA

A Weekly Magazine Devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades

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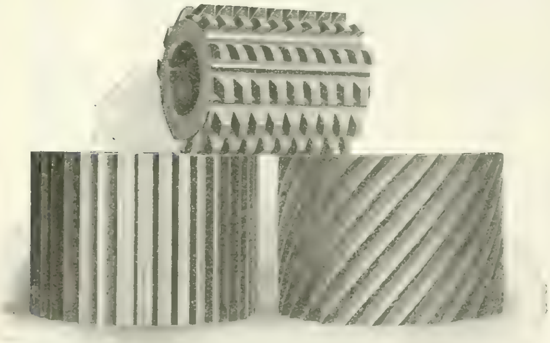

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:-: EDITORIAL :-:

THE EMBARGO

The stir in the United States over the pending Canadian embargo on all shipments of unmanufactured wood is at least on a par with the excitement in England and elsewhere over the interpretation and enforcement of the American prohibition law as it affects ocean liners. A great deal has been said on the question and more will be heard before it is settled. No one is blind to the fact that an embargo on the export of pulpwood would be a hardship to mills depending on Canadian supplies and temporarily on Canadian dealers and operators, and few will regret this condition more than the Pulp and Paper Magazine. But while we sympathize with those involved in this phase of the industry in their present predicament, we also realize the hardship already upon Canadian mills, and their employees, who are even now out of work for lack of wood; while pulpwood goes out from under their noses to feed American mills.

In a sense, the need for such drastic action as an embargo casts a reflection on the past management of our timberlands and should be a spur to immediate revision of policy. But the fact stares us in the face that we are short of pulpwood as well as other timber and vigorous measures are necessary at once. There simply is not wood enough to go round at the present rate of use and abuse of the forest. Just how the embargo will ultimately work out cannot, of course, be accurately predicted; it will, however, insure work for Canadian workmen in converting it to pulp. The spending of their wages in Canada means a benefit all round. The closing of even a small mill means 25 workless wage-earners, and employment in many sections of Canada is directly dependent on these mills, whereas, in the United States, a greater variety of employment is available.

Many comparisons have been drawn between the Fordney tariff on wheat and the embargo on wood. A flour mill in the States dependent on Canadian wheat would be in practically the same position as a pulp mill dependent on Canadian wood. The difference is that wheat is more easily obtained there than is pulpwood. There is pulpwood available in the States; some of it is locked up politically in the very back yards of mills crying for Canadian wood and so high an authority as the National City Bank of New York says that there are supplies of pulpwood in the United States and its possessions adequate to satisfy the requirements of the newsprint industry for years to come. But these supplies are in the Western States and Alaska and transportation costs from there to the consuming centers would now be prohibitive, while more than 60,000,000 acres of potential forest lands accessible to operating mills are idle. An annual growth of 1/3 cord of pulpwood per acre on this area would provide more than 3 times the present requirements of the American mills. But practically nothing is being done to put this land in producing condition. The mills cannot possibly live on available wood from freehold lands in Canada. An end to this supply is rapidly approaching and an adjustment of some kind is inevitable. The embargo precipitates the decision.

The Press of the United States intimates a fear of rising paper prices and well they may. Such a movement seems absolutely certain. Stumpage dues should have been doubled long ago, and the proceeds invested in new forests. Higher prices, thus caused, will be but insurance premiums on the life of the publishing industry. The talk of retaliation with regard to hard woods, coal and sulphur may be serious, but need not cause alarm. There are hard woods in the Empire, coal in Canada, and sulphur in Italy and Japan. A stoppage of paper supply to the publishing industry would be a far greater calamity than an increase in price due to more expensive wood.

A brief comparison of newsprint production will be interesting. The output in Canada in May was 112,315 tons and in the States 138,868, both new records. With new machines under construction for Canadian mills it is probable that before the end of the year the Dominion will be the world's greatest producer of this commodity. This is entirely a natural development. Whether an embargo brings more mills across the line is beside the point; the mills established now need wood, in order to keep their workers employed.

In the course of certain articles given to the press, it is stated that the embargo would seriously affect the paper and printing industry of the United States, the annual product of which is valued at $3,000,000,000 and the employees numbered at 500,000. This, of course, attracts attention to the size of the paper and printing industries, **combined**, but the census report shows that in 1921, evidently the year referred to, the products of the paper and pulp industry amounted to $1,053,200,000, including $215,000,000 worth of paper bags and boxes, not made in paper mills. If concern is felt for the printing and publishing industry, why not remove or reduce that prohibitive tariff against book paper? As a matter of fact, the United States mills use about 6,000,000 cords of pulpwood. In the neighborhood of 1,200,000 cords, or 20 per cent. of this, comes from Canada. From the best estimates available, about one third of this quantity goes to five or six concerns, and ten firms probably use half of it. One is scarcely correct in thinking that even all the pulp industry is affected, although it is true that one member cannot be injured without others feeling it, At the same time, some of the mills that are using largely of Canadian wood are doing so to conserve their own supply at home.

It is not an impossible situation. Wood can be had elsewhere. No doubt prices of wood, wood pulp, and paper will go up, but that is inevitable anyway; the imminent shortage and necessity for more expensive management of forests, must force this movement.

Where it comes to possibly injuring owners of woodlands, and operators with contracts, we want to see them properly protectede and compensated.

EMPIRE FORESTRY CONFERENCE

During the summer of 1920 the first British Empire Forestry Conference was held in England. The war had impressed leading statesmen and foresters with the enormous importance of timber and the necessity for domestic supply. It is necessary to keep watch on the supply and to know, at first hand, what and where it is. The main item on the program this year is "The World's Softwood Supplies", a topic particularly appropriate to a meeting in Canada, and one of paramount importance in view of the universal use of softwoods in building construction, and the absolute dependence of paper making and printing on these species.

The Conference will be officially opened in Ottawa on July 25th, and immediately thereafter the Eastern tour to the provinces of Quebec, New Brunswick, and Nova Scotia, will be undertaken. This will be followed by business sessions to be held in Ottawa during the week of the 6th to 11th of August. Following upon the business meetings the Conference will start on the Western tour, visiting points in Ontario, Manitoba, Saskatchewan, Alberta, and the interior of British Columbia. Subsequently a tour to appropriate points on the mainland and Vancouver Island will be taken by boat; the Conference finally reaching Victoria where the concluding sessions will take place.

The Conference will be entertained at Montreal on July 26th and will go from there to the St. Maurice Valley and other points in Quebec. The Pulp and Paper Association is active in making suitable preparations.

GIVE HIM A HAND

The Canadian Pulp and Paper Association gave serious consideration at its last annual meeting to the question of establishing a research department under a competent research director. A select committee, after long deliberation had submitted a comprehensive report, but as the plan proposed would involve a large expenditure, and as some further preliminary work was advisable, the association deferred taking definite steps toward the establishing of such a department as outlined in the report. However, the matter has not by any means been dropped.

The committee realized that the logical way to begin the work of co-ordinating, promoting and directing research work in the industry is to know as much as possible of the facilities, problems and attitude of the members of the association. Such information is best obtained by an organized survey. By a happy coincidence, the services of Mr. E. P. Cameron were available for a time, and the Forestry Branch, through the Forest Products Laboratories, welcomed the opportunity to be of further service to the industry by delegating Mr. Cameron to make the survey. Mr. Cameron is in charge of the Pulp and Paper Division of the Laboratories, and has been engaged for a number of years on the investigation of pulp and paper mill problems. As an active member of several committees of the Technical Section, he has a wide acquaintance with the personnel and problems of the industry. Mr. Cameron is a trained and experienced research man and the industry is fortunate in having him undertake this survey.

The basis of successful co-ordination of research work is, to put it a little differently, a knowledge of what is to be done, where it can best be done, and who is qualified and willing to do it. The industry now has a wonderful opportunity to find out "where we are at" and it is only common sense to show Mr. Cameron every courtesy and give him every facility to get complete data for an accurate and comprehensive report. On this depends very largely the policy of the Association with regard to this very important matter of research. The more complete the report of Mr. Cameron, the more intelligent will be the decision of the Association.

COBWEBS

The announcement that the American Paper and Pulp Association will carry on the statistical work of the Federal Trade Commission in connection with this industry was practically coincident with an editorial on the subject in our issue of July 5. No "great minds" stuff about it; we just could not see how the industry could afford to have this service discontinued.

YES! WE HAVE NO BANANAS

But we have enough copies of those back numbers of the Pulp and Paper Magazine for the present, thank you.

The Effect of the New Russian Economic Policy on the Paper Industry of North America

By F. T. HARRL.

Assistant to Vice-President, International Paper Co

(From "The Paper Mill")

As the new economic policy of the Soviet Government of Russia will apparently in the not distant future affect either directly or indirectly every paper manufacturer on the North American Continent, it seems timely to survey briefly the Russian paper industry and its economic background, and then to determine what will be the effect of the new policy on our own industry.

The new policy is the initial move toward the recognition of the rights of private property, and this first surrender to the laws of economic necessity has been virtually precipitated by the urgency of creating industrial activity to restore the balance of trade. Exports of merchandise from Russia during the best months amount to only one-half the imports, which are themselves an absurdly low percentage of those of the pre-war years.

With the gradual dissolution of communism, free internal commerce has been legalized, banks and commodity exchanges are reappearing, and thus far 8,000 factories and mines have been turned over to "capitalist" managers. The risks of trade would seem insurmountable to us, for there are no civil tribunals and no credit, and the arbitrary authority of the various Soviets may still be impressed almost at will. Nevertheless, the people, who for five years have appeared passive and somber, now seem to have awakened and to want to live and act. A class of profiteers has been developed in an amazingly short time and is attempting to seize control of the reviving industrial life.

In Lenin's address before the Fourth Plenary Session of the Third International, toward the end of last year, he said that he proposed to incorporate mixed companies, wherein part of the capital would be foreign private capital and the other part Soviet capital. Lenin then stated that in this manner they would learn how to trade, and that if it should prove desirable, such companies could be dissolved and the Soviet Government would after all really run no risk!

Thus the revolutionary government of Russia has assumed "capitalistic" features. Heavy indirect taxes and customs duties are levied, the overgrown bureaucracy is being reduced, and government industries are being abandoned. An example of this is seen in the customs duties which were immediately levied on the products of Finland when the provisional trade agreement with that country expired on October 3, 1922. This agreement was executed in the latter part of 1921, and was terminated by Russia on the six months' notice required to be given. The application of a tariff was followed instantly by a rapid rise in the prices of paper in Russia.

The Russian Revolution ends thus in an absolutism shorn of every revolutionary dream, just as that of the English of 1649 ended in the absolutism of Cromwell and the French Revolution of 1789 in that of Napoleon Bonaparte.

Although before the war Russian paper mills supplied only 18 per cent. of the total domestic consumption of all kinds of paper, yet it is obvious that Russia's enormous forest wealth and waterpowers will ultimately place the country among the great paper producing nations of the world. This will not be realized, however, for over a decade, as the rebuilding of Russian industries must proceed by districts, and a return to normal industrial life on a national basis cannot possibly be expected within that period. Then, too, the eventual construction of paper mills can only be accomplished with the support of the Government, as the greater part of the forests is owned by the State.

During the next ten years Russia must therefore be an importer of paper on a vast scale. The latest authentic information available shows that imports of paper are consistently increasing monthly. Finland, as before the war, is again the backbone of Russia's paper suply, and Germany, Czecho-slovia, and Esthonia are shipping in paper to a very limited extent.

When one considers that before the war, in 1913, Russia produced 424,000 tons of paper of all kinds; in 1920, 40,800 tons; and in 1921, 36,000 tons, one receives a vivid picture of how Bolshevism has ruined a paper industry, in common with other industries. And the picture becomes more vivid when it is known that the average production of paper decreased from 34,668 pounds per worker per year in 1913, to 3,611 pounds per worker per year in 1920. Both of these significant facts are visualized in the two accompanying graphs.

In 1913, 25,000 workmen produced 424,000 tons of paper, while in 1920, 20,000 workmen, or only 20 per cent. less, produced 40,800 tons, or 90 per cent. less paper. One of the causes of this lowered individual productivity is the inferior physical condition of the workmen. In addition to the physical hardships which they endure, the workers are deprived of a good part of their wages, about 40 per cent. being taken for the different labor organizations. A workman must pay membership dues whether or not he joins the organization.

We do not know how much news print paper Russia produced before the war. The Soviet schedules call for a production this year of 48,000 tons of paper of all kinds, of which 15,700 tons, or 33 per cent., is news print. This percentage cannot be applied to prewar totals, however, as the Soviet Government requires for its propaganda purposes quantities of news print out of all proportion to other grades. In this connection it is interesting to note that the daily newspapers of Petrograd, Moscow, and other large cities are owned by the Government. It is certainly doubtful whether in all Russia there is a single privately owned newspaper.

Economists used to tell us that the material advance of a people is measured more accurately by the consumption of iron and steel than by any other single article. As the consumption of news print paper is now supplanting these metals as a more accurate barometer of conditions, Russia's demoralized state can be readily gauged by its almost negligible consumption of paper. The consumption of all kinds of paper now amounts to only about one pound per capita per annum, while in the United States we are using this year more than forty-five pounds per capita of news print paper alone.

The Soviet Government has organized a Technic-Economical Council to assist and promote industries. The first Congress of this body was held in Moscow, February 15-20, 1922. Shortly afterward, realizing the necessity of encouraging domestic paper making, the Government started a paper division known as the "Technic-Economical Council of the Paper Industry." The members of this council are prominent papermakers and engineers. The council will be supported by assessments on the profits of the various paper companies. Under the auspices of the section there will be founded a school for paper-making, with laboratories for pulp and paper tests and experiments; a library will be established, literature on the subject of paper-manufacture will be published, and all other work of this nature now carried on in "capitalistic" countries will be begun by the Soviet Government. But the results of such work, as we all know, require a great many years to be either effective or of value.

Russia, in the next decade of renascence, will be an increasingly great importer of paper, all or the greater part of which will be logically drawn from the contiguous paper-making countries of Finland, Germany, Norway, and Sweden. The potential absorptive power of Russia in paper is best appreciated by a comparison. In the Southern States, where illiteracy is the greatest in the United States, there was a consumption of news print paper last year of eleven pounds per capita, and of all kinds of paper, of about thirty-five pounds per capita. The Eastern States, for example, used fifty-eight pounds of news print per capita, or five times as much, in the same period. In the best State of the Southern States there was one copy of a daily newspaper published to every seven inhabitants; in Mississippi, one copy to every thirty-eight inhabitants. In Massachusetts, there was one copy to every two inhabitants. If the consumption of paper by Russia were on the same low basis of that of our Southern States, it would be between two and two and a half million tons annually, as against the present consumption of under 100,000 tons. If Russian consumption of all kinds of paper were on the basis of that of our Middle Western States, where the population is the most thinly diffused, it would be about five million tons annually.

It will not be long before Russia's neighbors will have a ready market for their surplus paper at their very doors, and will find it more profitable to sell such paper to Russia than to the United States and South America, where they are now meeting and will continue to meet a competition which will keep down their profits. The influx of overseas news print paper into the United States during the past few years has been largely due to the withdrawal of the Russian market. An important factor in forcing overseas paper manufacturers, now sending their products to the United States, to develop a market in Russia, will be the disnclination of Americans to continue buying paper nade thousands of miles away. There is no paper in he world consistently equal in quality to that made n the North American Continent, and the paper manufacturers over here are fully able to supply domestic requirements. Newspapers and other consumers of paper know that year in and year out they can always depend on satisfactory deliveries from home producers, and they are not going to continue to buy overseas paper, with all the attendant uncertainties, when it costs practically as much as domestic paper. The present influx of overseas paper is simply a flurry.

As it costs three times more to make paper in Russia than the price at which the best Finish paper is now being quoted, it is obvious that as Russia recovers, the adjacent countries will not be slow in discovering the existence of a market which will absorb all their paper and which will in turn enable them to quote highly profitable prices.

It is not beyond the range of possibility that before Russia can produce sufficient to meet its own requirements, paper from the North American Continent will be used in the land of the snows.

NEW BRUNSWICK NEWS

The erstwhile Ford assembling building at Glen Falls, N.B., which has been utilized as an assembling plant for the Ford Manufacturing Company, later as a motor car manufacturing plant, still later as an automobile painting and repair shop, and more recently, as a paper box and corrugated paper factory, will now house another paper box manufacturing concern. The D. F. Brown Paper Box Company of St. John, N.B. have removed from the building erected many years ago on Canterbury Street in St. John and are now at the Glen Falls plant. For two years, the Clarke Brothers Limited, owners of a pulp mill and two saw mills at Bear River, N.S., operated the Glen Falls plant as a paper box and corrugated paper factory. Owing, however, to financial difficulties within this concern, the paper box and corrugated paper factory was discontinued. The new occupants of the building, have been manufacturing paper boxes in St. John for the past half century.

The burning of slash during the spring and summer may be banned in the province of New Brunswick, starting with 1923. Efforts are being made to secure such prohibition. Pulpwood lands have suffered greatly from fires started by those burning slash during the spring and summer. Under the present law, a person may burn slash without permit until the fifteenth of May and after that a permit must be obtained. But hundreds of fires are started without permits. In fact most of the fires are started by persons who do not bother about permits in the least.

It is felt that slash burning should be deferred until the fall, when there is much less fire hazard. There would be little inconvenience in postponing these fires, and much of the valuable pulpwood would be saved. While prosecutions have been made in isolated instances, for starting slash burning fires without permits, practically all of the fire starters have escaped without being prosecuted. The penalty for starting a fire without permit is very severe entailing a prison sentence of fourteen years as the maximum, but owing to lack of officers, it is impossible to effectively enforce the law.

The great thing in this world is not so much where we stand, as in what direction we are moving.

A Determination of the Power Consumption of a Ball Bearing Dryer Cylinder

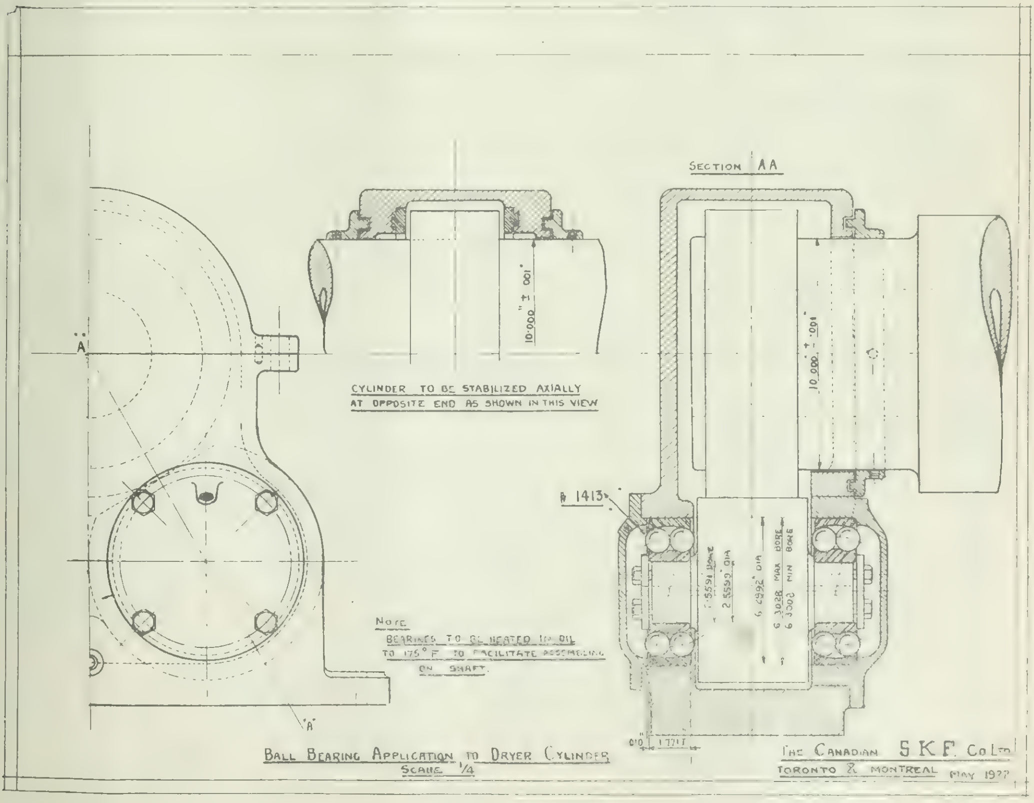
The ball bearing equipped dryer cylinders recently installed at the plant of the Chester Paper Company (Chester, Pa.) were the first of their size and type. They are part of an all ball bearing 166" Tissue Paper Machine designed to run at 700 ft. per minute. This machine was manufactured and set up by the Pusey & Jones Company of Wilmington, Del. All of the ball bearing mountings were designed with the advice and approval of the S K F Industries, Inc. There are 17 dryer cylinders each 60" diameter by 173" face, weighing 12,000 lbs., and having a moment of inertia of 58,000 lb. ft^2.

This paper is a report of the test that was performed on the dryer cylinders in order to make a preliminary estimate of the power consumption.

The conditions of the test were unfavourable in that the cylinders were recently set up and had not previously been run. In fact the bearing castings were not finally lined up. On the other hand, the steam joints were not yet in place and there was no felt on the machine. The power loss due to the steam joints should be comparatively small in view of their design; that is several metallic rings, under pressure applied by several small springs. Some allowance should be also made for windage and weaving losses in the felt. Theoretically there should be no increase in the power consumption of the bearings when the felt is put on the machine. This is so because whatever load the felt tension adds to the weight on the upper cylinders will be subtracted from the weight on the lower cylinders. This arithmetic is somewhat faulty in actual practice, because there is a small change in the coefficient of friction at the higher and lower pressures.

The power consumption was determined in three independent ways, as follows:

1. By using a motor whose efficiency curve was known, and determining its power consumption.
2. By using a string wrapped around the cylinder and a weight to start the machine.


SECTION AA
A
A
10.000" ± .001
10.000" ± .001
CYLINDER TO BE STABILIZED AXIALLY AT OPPOSITE END AS SHOWN IN THIS VIEW
NOTE
BEARINGS TO BE HEATED IN OIL TO 175° F. TO FACILITATE ASSEMBLING ON SHAFT.
# 1413
7.5591 BORE
2.5590 DIA
6.6992" DIA
6.3028 MAX BORE
6.3002 MIN BORE
.010
.1771
THE CANADIAN S K F. Co Ltd
TORONTO & MONTREAL
MAY 1922

BALL BEARING APPLICATION TO DRYER CYLINDER
SCALE 1/4

3. By getting the cylinders up to speed and then letting them coast. The time necessary to stop gives a direct indication of the bearing friction and the power consumption.

Method I.

3 HP 1200 motor (Fairbanks Morse & Co. No. 91957 2 phase 220 V 60 cycle) was set up on skids with a countershaft, and arranged so as to give five speeds at the cylinder varying from 10 to 45 rpm. (See Photograph.) The power consumption was measured and recorded by a Bristol strip type recording wattmeter (Model 725, Serial 398). During the first few readings, this wattmeter was calibrated against an indicating wattmeter loaned by the Philadelphia Power & Light Company. Power consumption readings were taken at each of the five speeds on cylinders No 1 and No 2 alone and then on the first three cylinders and two felt rolls running together. Fig. 1 is a graph of the net power consumption as determined by this test.

The recording wattmeter showed several peculiar vibrations in the rate of flow of power. In order to locate these, readings were taken with the motor alone, and also with the motor and countershaft alone. These readings indicate that the motor itself causes no vibration at all, and that there is a small vibration of about 85 per minute produced by the short belt to the counter shaft. Superimposed upon this is a vibration caused by the unbalance of the cylinders. It is difficult to balance a 12,000 lb. cylinder very closely, and as the total force to turn the cylinder is about 10 lbs., at the surface, it is to be expected that the variation of power will be large compared with the total. Thus at the slow speeds there is a large wave whose period corresponds exactly with the speed of the cylinder and a small wave produced by the countershaft.

It is difficult to explain the variations of power with speed indicated in Fig. 1. The various possible causes are; first, that the cylinder bearings warmed up slowly and second that the unbalance of the cylinders caused a speeding up and a slowing down and the resulting belt slippage involved a power loss. This latter effect is naturally minimized at the higher speeds on account of the fly wheel effect. This is the only plausible explanation for the peculiar shape of the power curve for all three cylinders. In any case the only positive conclusion possible is that the three cylinders did not use more than ½ HP or approximately 125 watts per cylinder at rated speed.

Method 2.

A string was wrapped several times around the cylinder and passed over a small pulley on the ceiling and 15.1 lbs. tied at the end. The photograph shows the string before it was attached to the cylinder.

This part of the test was complicated by the fact that the unbalance of the cylinder produced a larger torque than that necessary to overcome the bearing friction. In order to subtract this unbalance effect it was necessary to use a large starting torque and measure the acceleration over a complete revolution. Then using the average acceleration and the moment of inertia of the cylinder, it was possible to determine what part of the applied torque was used to produce acceleration, and what part was absorbed in bearing friction.

Figure 1

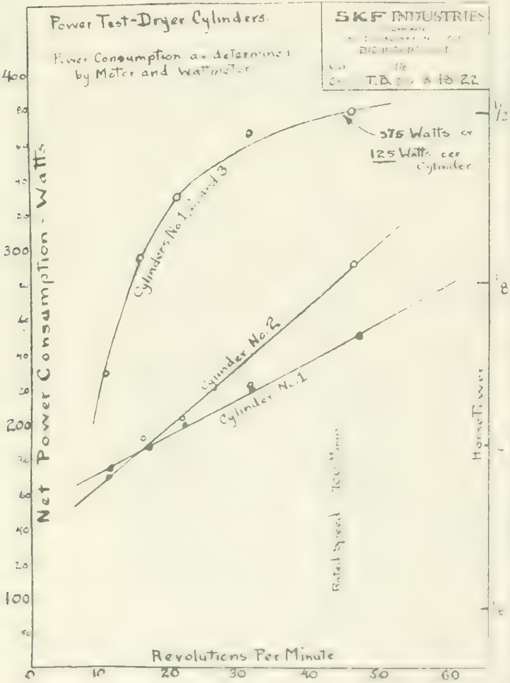
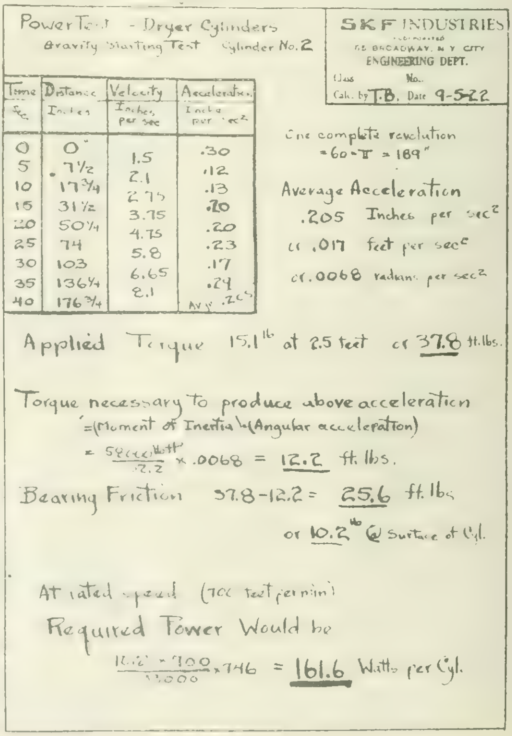


Figure 2



Power Test - Dryer Cylinders

Gravity Starting Test Cylinder No. 2

SKF INDUSTRIES
INCORPORATED
55 BROADWAY, N Y CITY
ENGINEERING DEPT.
Class No.
Calc. by T.B. Date 9-5-22

Time Sec	Distance Inches	Velocity Inches per sec	Acceleration Inches per sec²
0	0"	1.5	.30
5	7½	2.1	.12
10	17¾	2.75	.13
15	31½	3.75	.20
20	50¼	4.75	.20
25	74	5.8	.23
30	103	6.65	.17
35	136¼	8.1	.24
40	176¾		Avg .205

One complete revolution = 60 × π = 189"

Average Acceleration
.205 Inches per sec²
or .017 feet per sec²
or .0068 radians per sec²

Applied Torque 15.1 lb at 2.5 feet or 37.8 ft. lbs.

Torque necessary to produce above acceleration
= (Moment of Inertia) × (Angular acceleration)

$$= \frac{58000 \text{ lb ft}^2}{32.2} \times .0068 = \underline{12.2} \text{ ft. lbs.}$$

Bearing Friction 37.8 - 12.2 = 25.6 ft. lbs
or 10.2 lb @ Surface of Cyl.

At rated speed (700 feet per min)
Required Power Would be

$$\frac{10.2 \times 700}{33000} \times 746 = \underline{161.6} \text{ Watts per Cyl.}$$

Fig. 2 gives a list of the readings and calculation of the bearing friction. The conclusion is that the power necessary to overcome the friction alone would be 168 watts per cylinder at rated speed. Of course this figure assumes that the coefficient of friction at starting will be the same as that at rated speed.

Method 3

When all three cylinders were at rated speed they were suddenly freed by the breaking of the long felt. Then the time required for each to come to rest was measured. (See Fig. 3). This period of coasting varied from 4, m. 55 sec. for cylinder No. 1 to 10 m. 5 sec. for cylinder No. 2. The large variation indicates how unsettled the bearing conditions were.

Using the moment of inertia of the cylinder and the initial speed, the initial kinetic energy was arrived at. Then assuming again that the coefficient of friction is constant, we can determine its average value over the range from starting to rated speed. The resulting power figure is 123.6 watts per cylinder at rated speed.

Conclusions

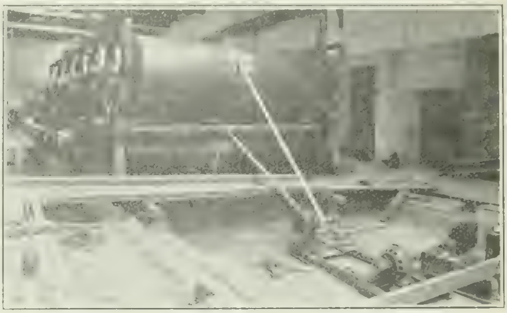
The power consumption per cylinder has been determined as follows:

Method 1.	By motor and wattmeter	125 watts
Method 2.	By gravity starting test	161.6 watts
Method 3.	By coasting test	125.6 watts
	Average	136.4 watts

For 17 dryer cylinders, the total would be 3.1 H.P.

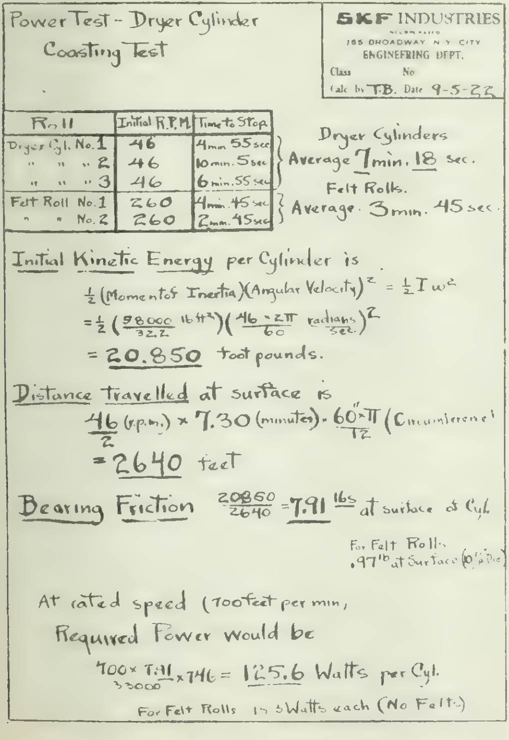
To this should be added an allowance for the friction of the steam joints and the windage and weaving losses in the felt. In determining the necessary power for the whole machine account should also be taken of the auxiliary power losses such as the felt dryer, if there is any, the felt carrying rolls, and the gear losses. Therefore a conservative estimate of the total power would be 5 H.P. though the machine would probably use about 4 H.P.

The only means of comparing these results with other tests is to determine the absolute value of the coefficient of friction. As it is impossible to separate the friction at the surface of the roller from that in the bearing, it was assumed that the coefficient of friction was the same at both places though that at the bearing should be less. Using, this assumption and 136.4 Watts per cylinder the coefficient of friction was



Photograph of Set-up for Test.

Figure 3



Power Test - Dryer Cylinder
Coasting Test

SKF INDUSTRIES
INCORPORATED
165 BROADWAY N. Y. CITY
ENGINEERING DEPT.
Class No
Calc by T.B. Date 9-5-22

Roll	Initial R.P.M.	Time to Stop
Dryer Cyl. No. 1	46	4 min 55 sec
" " " 2	46	10 min. 5 sec
" " " 3	46	6 min. 55 sec
Felt Roll No. 1	260	4 min. 45 sec
" " No. 2	260	2 min. 45 sec

Dryer Cylinders
Average 7 min. 18 sec.

Felt Rolls.
Average. 3 min. 45 sec.

Initial Kinetic Energy per Cylinder is

$$\frac{1}{2}(\text{Moment of Inertia})(\text{Angular Velocity})^2 = \frac{1}{2} I \omega^2$$

$$= \frac{1}{2}\left(\frac{58000}{32.2} \text{ lb ft}^2\right)\left(\frac{46 \times 2\pi}{60} \ \frac{\text{radians}}{\text{sec.}}\right)^2$$

$$= \underline{20.850} \text{ foot pounds.}$$

Distance travelled at surface is

$$\frac{46}{2} (\text{r.p.m.}) \times 7.30 (\text{minutes}) \times \frac{60'' \times \pi}{12} (\text{Circumference}$$

$$= \underline{2640} \text{ feet}$$

Bearing Friction $\frac{20860}{2640} = \underline{7.91} \ \underline{\text{lbs}}$ at surface of Cyl.

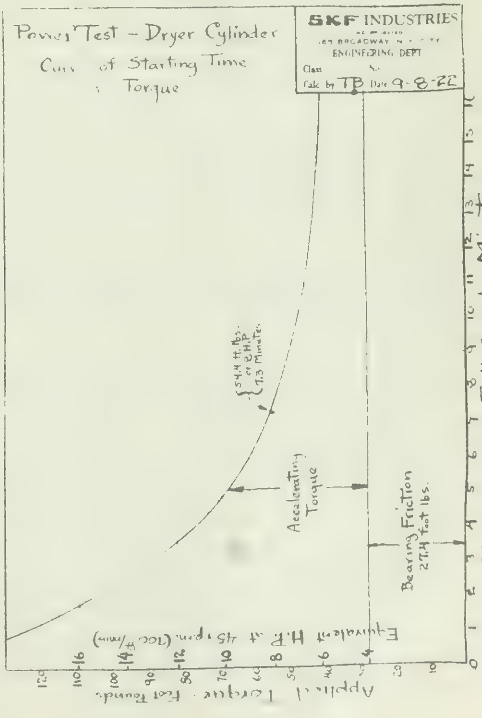
For Felt Rolls
.97 lb at Surface (10" Dia)

At rated speed (700 feet per min,
Required Power would be

$$\frac{700 \times 7.91}{33000} \times 746 = \underline{125.6} \text{ Watts per Cyl.}$$

For Felt Rolls 15 Watts each (No Felt)

Figure 4



.0018 or 1/550. This value corresponds with that usually arrived at for ball bearings, that is 1/600.

The results of this test are of particular importance in their application to the problem of driving dryer sections. There is a movement on foot to eliminate the gear drive entirely and make use of the reduced friction to drive through the felts only. In this particular case such a drive would produce a maximum tension in the felt or approximately 200 lbs. or a little over one lb. per inch. of width.

There is a considerable discussion as to the starting minutes (coasting time). Therefore to start the machine. This power is a function of the desired starting time. In this particular case, there is enough data on hand to determine the curve, (Fig. 4) as follows: The entire machine requires about four HP when running, that is the bearing friction torque is 27.4 foot lbs. But this resisting torque will stop the machine in 7.3 minutes (coasting time). Therefore to start the machine in 7.3 minutes requires 27.4 ft. lbs. to overcome bearing friction and 27.4 ft. lbs. to accelerate. This latter component varies inversely as the time of starting, whereas the bearing friction remains approximately constant. Thus we can construct figure 4.

The curve indicates that a large investment in oversize motors and gears will hardly save enough time to be worth while. Moreover, if the motor is considered capable of 100% overload torque when starting, the nominal rating will be one half of that shown on the curve.

In applying the data of this test to other machines, the power can be considered proportional to the speed and to the total weight though only for very approximate results.

YOUR STOCKHOLDERS

STOCKHOLDERS are frequently "a long way from home." News of the nest wherein their money is invested is received with a particularly warm welcome.

A growing practice in many large corporations shows realization that shareholders receive with gratitude "human interest" information about processes, expansions, new products and general developments of "their" company.

Frequently, in many concerns, the list of shareholders will also be a list of prospects, as well as representing hundreds of vitally interested indirect agents ready to recommend and suggest the purchase of the products manufactured.

Where the investment is, the heart is not very far distant. There is here presented a chance to tell more of the news of the business, its progress, its line of products and to develop many sales.

If shareholders are made familiar enough with their own products and company, they will also become buyers. The quarterly mailing of dividends presents an easy opportunity to do a bit of sales work and good will developments.

Folders, pamphlets and booklets present economical ways of carrying on this propaganda for greater interest in matters of value to the company.—The Crest.

Words better left unsaid come back to grieve us when we think them dead.

FORESTRY CAR A SCHOOL ON WHEELS

One of the strangest "schools" in Canada is the forest protection car of the Canadian Forestry Association, a non-government and non-commercial institution, which is at Bonaventure station this week, after winding up a tour of New Brunswick, Nova Scotia, and the Lake St. John region of Quebec. Travelling more than 12,000 miles between April and November, and attracting more than 250,000 visitors, the forest protection car has established itself as a welcome annual itinerant in regions which are seldom touched by outside educational agencies.

The interior of the car is divided into latticed rooms. Working models present a graphic picture of a thriving Canadian community before and after a forest fire has swept away its means of sustenance. Electrical illusions compell the onlooker to realize the ugly facts behind the phrase "bush fires." An erosion model presents a contrasted picture of a valley farm protected in its water supply by mountain forests and a second farm ruined and washed out by the torrent of deforested hillsides. By illuminated transparencies, process exhibits, etc., other aspects of forest protection are presented.

To attract crowds for the evening meetings in remote railway communities, a Marconi radio set of eighteen bulbs is carried, with which interludes of concerts a thousand miles distant are presented along with educational motion pictures. The Canadian Forestry Association's lecturers this season have presented motion pictures in many communities where "movies" of any kind had never previously been seen by most of the population. To witness the excited expression of the older people and the unrestrained shouting of the children under such novel circumstances was an experience difficult to describe. In one village of Northern Quebec, the lecture was held in a large school-house, built on log posts, and in the middle of the address, the entire floor, under the weight of the crowd, dropped uniformly three feet to the level of the ground without injuring anyone. The chairman, seated on a nail keg, was bowled over but, otherwise, the dignity of the gathering suffered little.

IT IS HOT IN HAWAII

In spite of the fact that it gets hot in Hawaii, a reader of the Pulp and Paper Magazine in the paper mill which utilizes sugar cane waste, finds time for studying the textbooks on "Pulp and Paper Manufacture", and has been good enough to write us quite a letter on general conditions in that far away land, and makes the following remark with regard to the textbooks:

"I now have volume III and am looking forward to volume IV and V. They are certainly fine books on the subject; everything is treated so completely and thoroughly, and the cost of the set is so reasonable that they are within the reach of everyone connected with the industry. The Pulp and Paper Industry was sorely in need of a work of this kind."

PAPER MILLS' EMPLOYEES ON ANNUAL PICNIC

Employees of the Port Arthur Division, Provincial Paper Mills, Limited, held their annual picnic at the company's farm on the Oliver Road, Monday last. There was a happy gathering of employees and their families and during the day a program of sports and athletics was carried out.

Various Views On The Embargo

OPINION OF SECRETARY BAKER

That the proposed embargo on the export of Canadian pulpwood to the United States would be a calamity to the paper industry of this country is the statement made in a review of the Canadian situation sent by the American Paper and Pulp Association to its membership.

"The Canadian House of Commons has passed a resolution empowering the Governor in Council to prohibit the exportation of pulpwood (to this country) from privately owned timberlands in Canada," says the statement which is signed by Dr. Hugh P. Baker, Executive Secretary of the American Paper and Pulp Association. "For many years the pulp and paper mills of northern New York, New England and the northern Lake States have purchased from 25 to 100 per cent of their annual pulp wood requirements from the freehold lands of Canada.

"Many of our paper mills have become so dependent an Canadian pulpwood that an embargo would not only cause extreme hardship but might even force them to cease manufacturing.

"Since the passage of this Act at Ottawa the leading newspapers of Eastern Canada have commented the action very highly and urged its early application. Should the Dominion act, as it is now empowered to do, a number of mills in northern New York and elsewhere would be forced to close, meaning the loss of important industries to the State and the throwing out of employment of large numbers of wage earners.

"Such action by Canada would in fact be a calamity for the paper industry in the United States.

"It is unnecessary to discuss the effect of such an embargo upon the paper industry of the United States. The prices of wood and pulp would respond immediately to such an embargo, and if prices of wood and pulp advance the public will immediately feel the effect of this embargo in the increased cost of all paper.

"This threatened aggressiveness upon the part of Canada puts up to our industry one of the most serious problems with which we have been confronted in years. There is need for immediate and aggressive action."

ORGANIZED OPPOSITION

With a view to solving the problems raised by the threatened embargo on pulpwood exports from Canada to the United States, a number of leading paper manufacturers from all sections of the United States met last Thursday at the Union League Club in New York and organized as the committee for the perpetuation of the paper industry in the United States.

Henry W. Stokes, of the York Daven Paper Company, Philadelphia, was elected chairman of the executive committee; A. G. Payne, Jr., of the New York and Pennsylvania Paper Company, was named Vice-Chairman, and Dr. Hugh P. Baker, Executive Secretary of the American Paper and Pulp Association, was elected Secretary.

The new organization will not confine its membership to the American Paper and Pulp Association, but will include nearly all the big companies, both organized and unorganized. Manufacturers already enrolled represent more than half of the total productive capacity of the country, it is said

Commenting on the proposed Canadian embargo, Chairman Stokes said:

"If made effective, it will involve the entire paper and printing industry in the United States. The price of pulp wood would at once begin a rise toward war time levels and more than a million cords of wood a year would be added to the drain on our own fast diminishing pulpwood resources.

"The paper and printing industries, every branch of which would be affected, have a total product valued at three billion dollars a year and employ more than half a million wage earners."

VIEWS OF MR. DODGE

Philip T. Dodge, President of the International Paper Company said that the proposed embargo would have the effect of increasing ultimately the price of newsprint and would literally subvert the American industry in favor of Canada.

According to Mr. Dodge, the threatened edict would not affect the International Paper Company as seriously as other American newsprint mills, due to its extensive woodland holdings in this country, but many smaller mills would be affected because of their utter dependence on Canada for their wood pulp.

"If we are not allowed to do business profitably we will turn to other grades of paper which can be produced at a profit, and we shall sell current from our water power developments," said Mr. Dodge. "No doubt other companies will be forced to do the same. The Canadian legislation is a blow at the American paper manufacturer."

The legislation which provides for an embargo, Mr. Dodge said, had not been unexpected, but he thought it imperative that the State Department should act promptly to safeguard the American manufacturers' interests.

The proportion of paper other than newsprint made by the International is steadily increasing. The mill at Niagara Falls has been converted to the manufacture of sulphite bond, book and other high-grade papers. Another mill at Wilder, Vt., has also been shifted to the manufacture of special high-grade papers. Both of these plants have been operating on a profitable basis. Newsprint production in 1922 was only 62 per cent. of the company's output.

For the last ten years Canada has exported an average of over 1,000,000 cords of pulp wood yearly to the United States. If this supply were cut off, in the opinion of American manufacturers, a serious shortage would be felt and a sharp rise in prices for pulpwood cut in the United States, where timber lands are fast diminishing, would be inevitable. It was declared that book and magazines publishers of this country, as well as newspapers, would likewise suffer, as the pulpwood shortage would strike the entire paper industry.

American manufacturers fear their ultimate elimination as competitors in the newsprint market if the embargo becomes effective. The Canadian newsprint mills, they say, will be assured of immense supplies of pulp wood and will be able to monopolize the United States market at their own prices.

AMERICAN PAPER MAKERS PLEASED

American paper manufacturers, particularly those producing newsprint, are elated over the news, contained in Washington despatches last Monday, that the Canadian Government has decided to postpone enforcement of its pulpwood embargo pending an investigation by a royal commission regarding the possible effects of such a measure.

Philip T. Dodge, president of the International Paper Company, when informed of the reported postponement, said he was gratified to hear it. He expressed the belief that the protests made by the American newspaper publishers and the newsprint manufacturers had had the effect of causing the postponement. These protests were made through the State Department, which announced the receipt of a communication from the British Embassy stating that the proposed embargo had been delayed to permit of the investigation.

It is believed that the Canadian Government, besides realizing the disastrous consequences of the proposed embargo to the American paper industry, was also influenced in its action by the fear of possible retaliation through an American embargo on exports of coal and sulphur to Canada. According to Mr. Dodge, such retaliation would seriously interfere with the Canadian paper industry, as it is a heavy buyer of American coal and sulphur used in the industry there.

Mr. Dodge stated that the proposed restrictions by Canada were unfair, in view of the fact that the Canadian industry gets its coal and sulphur from this country without restriction.

The Canadian announcement made it clear that the embargo had not been abandoned, but Mr. Dodge said he looked for a decision that would be favorable to the American interests.

"I don't see how the decision could be anything else but favorable," he said. "They can't make paper in Canada without American coal and sulphur, and so this embargo proposition works both ways."

THE PULPWOOD SITUATION FROM THE CANADIAN STANDPOINT

(From the Financial Post, Toronto, July 13.)

While the question may seem complicated at first sight, it is really a simple one. The difference is not between Canadian and American industries fighting one another to obtain a practical monopoly, for the great bulk of the pulp factories in Canada are American owned; the fight is between two classes of American paper-makers — one class which was far-sighted enough to build its plants in Canada, the other which relied on getting its pulpwood from Canada for manufacture in the United States.

There is no question of hostility against the United States. American paper manufacturers have been very cordially welcomed here and will continue to be — but the Canadian position is that while these natural resources of our country are being developed by foreign capital for foreign use, we should have at least employment of Canadian labor, purchase in Canada of supplies used in the business, and as much other benefit as we can fairly claim. To aid in this policy, an embargo on pulpwood, it is believed, will bring the remaining American paper manufacturers into line with their more far-sighted competitors who have already established factories here. Even under the embargo, United States paper manufacturers will have an advantage, for Canadian paper firms have to pay the 6 per cent sales tax under the recent Bill, from which United States firms are exempt, while the taxation on Canadian business generally is much more heavy than that on United States business. The present policy of sending raw materials across the line for manufacture compels many young Canadians to go over the border to work on that raw material, and this is one of the causes of the serious loss of our young manhood to the United States.

In Canada, we have a huge country, a small population, and a heavy debt. These facts show that it is ordinary prudence to obtain the greatest possible benefit from our natural resources. The fact that we hold much of the world's remaining reserve of pulpwood is a fact which should aid in statesmanlike conservation of that resource. The proposed embargo does not go far enough. It should next take in pulp, so that all paper should be made in Canada, and an export duty imposed on paper with which to pay for forest protection and re-afforestation.

It is not antagonism between conflicting "Big Business" of two countries which has brought this situation: it is a condition in which ordinary business foresight, fair play and development of our own country meet in an extraordinary combination. All that is required is that the Canadian people shall enter intelligently into what is meant by the use and exploitation of their natural resources, and once that is accomplished we shall have justice to Canada as the first claim on our thoughts before we consider generosity to other countries.

REVIVE TALK OF MILLS IN B. C.

A despatch from British Columbia reads:

Hon. T. D. Pattullo, Minister of Lands, under whose department negotiations are being carried on, announced recently that six separate groups of financiers are negotiating with the provincial government for the establishment of pulp and paper mills in the province. He expects to have several propositions under way shortly.

A powerful group composed of Chicago and San Francisco financial interests is angling for control of the Bridge River Power Company, which will provide the power for a new pulp and paper enterprise.

Minneapolis capital is said to be behind a move to establish a big pulp and paper mill at Usk, on the line of the Canadian National (G. T. P.) and is reported to be interested in the rehabilitation of the plant of the Prince Rupert Pulp & Paper Company, formerly held by the Emerson interests. Following the death of John A. Emerson the company went into liquidation and recently has been operated only as a sawmill. If the new interests take hold of the property, it will be developed as a pulp and paper concern.

William Whyte and E. S. Dunham, continue to extend their capacity for service to the pulp and paper industry. They have been appointed Canadian Representatives for Hopperwood Dryer Felts manufactured by William E. Hopper & Sons of Philadelphia.

Woodlands Section

MR. R. H. CAMPBELL RETIRES AS DIRECTOR OF FORESTRY AFTER YEARS OF EFFICIENT SERVICE

(For the following account of Mr. Campbell's career we are indebted to the Canadian Forestry Magazine)

Every Canadian who is interested in forest conservation will learn with deep regret of the retirement of Mr. R. H. Campbell, Director of Forestry during the past sixteen years, in the Department of the Interior. His resignation from active service was fittingly marked on the evening of April 30th last at the Halcyon Club, Ottawa, by the members of the Forestry Branch staff, among whom were represented besides the Head Office staff those of the field offices in Manitoba, Saskatchewan, Alberta and British Columbia; the Forest Products Laboratories in Montreal and Vancouver, and the Forest Nursery Stations at Indian Head and Saskatoon.

The occasion was greatly enhanced by the hospitality of the ladies of the Head Office staff who served tea at 5 P. M. After tea Mr. Campbell was presented with a large silver presentation bowl from the entire staff of the Branch as a souvenir of their long association with him as Director of Forestry. The bowl bears the inscription, "Robert Henry Campbell, Esq., Director of Forestry, 1907-1923. From tht Dominion Forest Service. A token of highest esteem and personal affection." Besides this handsome gift from the whole Canadian Forest Service, the Ottawa staff took occasion to present Mr. Campbell with a club bag.

In making these presentations on behalf of the staff, Mr. E. H. Finlayson, Acting Director of Forestry, paid high tribute to the work of the retiring chief while in charge of the Branch. He pointed out that Mr. Campbell had won the high regard of his staff, not only by the thoroughness of his work, but also by his perseverance in establishing the importance of Forestry in Canadian life. Mr. Campbell had idealized the work of forestry, and had lost no opportunity to impress his ideal upon those associated with him in the work of administration. The earnestness with which he strove to live up to his ideal was carried out into the Canadian public life, and his influence on the progress of Canadian Forestry will long be felt.

Not less interesting were Mr. Finlayson's reminiscences of field experiences with Mr. Campbell on the occasions of his yearly visits to the Canadian forests, when he entered completely into the out-door life of the foresters and rangers, and by his manliness and ever present respect for their ideas, completely won the loyalty of all. The practical out-door woodsman can be approached only on his own ground, and Mr. Campbell was big enough to recognize this. Mr. Finlayson's reminiscences were carried on by Mr. D. R. Cameron, recently transferred to Head Office from the field, and who was chosen to represent the field staff at the presentation. Mr. Cameron dwelt upon the helpfulness of contact with Mr. Campbell in the out-door life during these periodical inspection trips, and attributed the splendid esprit de corps of the field staff to the fellowship of his visits. Mr. Cameron also read a number of telegrams received from the outside offices expressive of their regret for Mr. Campbell's retirement, and of their high personal regard for him.

It was not easy for one of Mr. Campbell's seriousness to lay down a work not yet finished, but he rose to the occasion and after acknowledging the gifts and expressions of personal regard in a most feeling manner, he recalled many interesting experiences in the work of the Branch. He regretted laying down work which had always been so pleasurable to him, not only in connection with the Canadian Forest Service, but also with that of the Canadian Forestry Association with which he had been identified before taking up the task of organizing the Government work.

For his successor he bespoke the loyalty of the personnel of the whole forestry staff, for whose individual opinions he had always had a sympathetic regard and exhorted all to remember the importance to the nation and to the world of the work in which they were engaged.

MR. R. H. CAMPBELL

A native of Strathroy, Ontario, Mr. Campbell has resided in Ottawa since boyhood. Entering the Civil Service in the Department of the Interior in 1887, he quickly "made good" and worked his way upward to the positions of private secretary to the Deputy Minister and Minister, and later he succeeded Mr. G. M. Ryley as head of the Timber and Grazing Lands Branch. In 1907 he was appointed Director of Forestry, in which position he remained until his recent resignation.

He was among those who early recognized the importance of the problem of the protection and preservation of the forests, and gave much study to these questions, particularly in so far as they affected Canadian forests. When the Canadian Forestry Association was formed in 1900, he was one of its charter members and its first assistant secretary and treasurer. He became secretary of the Association in 1904, and in 1905, on the establishment of the Association's official organ, the Canadian Forestry Journal (now the Illustrated Canadian Forestry Magazine) he was given editorial charge.

When, in 1906, Sir Wilfrid Laurier called a great Canadian forestry convention to meet in this city, Mr. Campbell, as secretary of the convention, had general charge of the arrangements, and much of the credit for the success of the gathering, involving, as it did, the government forestry administrations, the lumbering and pulpwood industries, the railways and other industrial interests and the men of science, was due to his hard work and skilful guidance.

His task as Director of Forestry has not been light and the splendid results achieved show the efficiency and worth of his work. From a head-office staff of scarce half a dozen, the number has increased to fully half a hundred, and the field organization shows similar increase and strength. The organization of the forest reserves, scarcely existent at his appointment,has been brought to a high state of development, and the work of protecting the forests — both within the forest reserves and without — from fire has reached a corresponding state of efficiency. Mr. Campbell lays down his task with a realization of high ideals already well on their way to attainment, and is followed by the heartiest good wishes of his late associates.

SIX WAYS TO SAVE THE FOREST

1. **Matches.**—Be sure your match is out. Break it in two before you throw it away.

2. **Tobacco.**—Throw pipe ashes and cigar or cigarette stumps in the dust of the road and stamp or pinch out the fire before leaving them. Don't throw them into brush, leaves, or needles.

3. **Making Camp.**—Build a small camp fire. Build it in the open, not against a tree or log, or near brush. Scrape away the trash from all around it.

4. **Leaving Camp.**—Never leave a camp fire, even for a short time, without quenching it with water or earth.

5. **Bonfires.**—Never build bonfires in windy weather or where there is the slightest danger of their escaping from control. Don't make them larger than you need.

6. **Fighting Fires.**—If you find a fire, try to put it out. If you can't, get word of it to the nearest fire ranger at once. Keep in touch with the rangers.

NEW BRUNSWICK STILL FEARS FIRES

The extremely dry conditions which have prevailed almost continuously this season throughout the province during and following the huge forest conflagrations which have swept away large sections of valuable timber stands, have not yet been relieved sufficiently to permit the removal of the embargo which has been placed on all forest travel. In fact considerable apprehension has been felt that a repetition of the conditions occurring in Quebec, where forest fires which had been placed under control have again broken out afresh, might occur in New Brunswick. No action has therefore been taken towards lifting the restrictions placed in effect as an emergency measure until this danger has been removed.

In the meantime crews are being employed in mapping the destroyed timber areas, so that arrangements may be made to salvage as much as possible of the dead timber, while a large number of prosecutions have been commenced by the Department of Lands and Mines against parties responsible for many of the recent fires. A large proportion of these have been attributed to criminal carelessness and disregard of the fire regulations and a number of criminal prosecutions have been undertaken.

In many of the fire areas patrols are still employed on the recent fire lines where fires are still smouldering in old roots, logs and turf.

FOREST FIRES

By MAURICE B. CARON, From *The Star*, Montreal

All too frequently, the school teachers of geography at the plastic time of youth have said to us "Canada, the land of boundless forests." How well, might have been added "Boundless forests, but for the hand of the bounder." The lesson at school and the oratory in the assembly hall tickled our hearts at the time and sent thrills of pride down our spines. Poor fools we were in those days. We believed the rubbish. The teachers, good souls, taught their lesson in much the same spirit as our class presidents carried Union Jacks to the assembly hall on days of national squeal.

A pall of heavy smoke hung over this city last week. People in the street gazed at it. Some ventured the idea that it was the end of the world. Knowing heads said "Forest fires." The end of the world business may have sounded rather humorous to some, but to the man of experience there was truth in it. Canada without her forests appeared before him as a sickly dame. Crowds were asking her for papers, magazines, time tables, income tax forms, anything in the way of paper. She was hanging her head poor woman in a very embarrassing situation, naked, cold, no furs to cover her, bad water to drink, no wood for shelter, none for fire when she really needed it, horribly unfortunate. Yet those crowds were calling for paper. The paper market looked like a pile of marks with a Ruhr situation setting a match to it. While we can say that the end of the world omen is bunkum, we must admit that Canada is beginning to squirm under the stranglehold in which she is gripped. This sort of thing goes on from year to year so much so that we have grown to expect it, very much like a Christmas present without the tree. We clap our country on the back at budget time, once a year saying (softly at first) "Never mind old lady, do better next time." Oddly enough, she does better, like a horse under the whip. Her natural resources, the horse, we, the burden. Yet she's a good horse. Let some of us get off, lessen the burden, clean her stall, sow a few decent oats, then come back, jump on again. Then she will carry us.

Fire prevention rings in our ears day by day, but are we growing better and better? Answer, but be honest. The newspapers tell us all about the great fires in northern Quebec and Ontario, western Canada, Northern Canada, everywhere in Canada. They tell us where they are, what their losses, when they started. How they will end, God alone knows. We see this in print, but optimism, dangerous trait of the race informs us that all will be well, and besides, "why should you as an individual worry about the things you can't see. Take a holiday, old worried brow, and get a pack on your back."

The suggestion sounds well and out we go into the woods.

"Remember that clump of spruce opposite your place?"

"Yes, why?"

"All charcoal now."

This sort of thing greets us at the station anywhere in the mountains. We leave the station, and after a ride along a road once beautiful, we reach our camping spot. The fire has spared our little patch. Our neighbour who owned the clump of spruce owns now something worth about half a dollar.

''Poor devil,'' we say, sympathetically of course. ''But let's think of pleasanter things. A little trout for supper, what say?'' The canoe goes out from shore with all the boys aboard ''Stroke'' says the man in the bow, ''Stroke'' adds the man in the stern.

''What about the little camp fire?'' suggests the oldest man in the party.

''Now, old timer,'' comes the reply from the tender foot ''It'll take care of itself.''

The fishing is not particularly good. The stream that used to run through the patch of spruce has dried up. There are no trout at the mouth this year. After an exhaustive casting we secure a few fish for supper.

Our little fire, a quarter of a mile away looks very cheerful. The evening breeze is springing up, the sparks fly. As we approach, the breeze cat-paws the water. Little wavelets form. Big waves grow. The little breeze becomes a wind—one of those nice head winds. The little fire grows to be a monster. The trees take a liking to it and away they go in one huge flame. The chorus in the canoe, in the happy way that choruses have, shouts ''Another good camp gone wrong.'' Our little episode ends with one of those quiet country scenes —a road, a dazed fishing party trudging homeward with empty flasks. The moral of the little story is ''Leave a man in camp when the fire is going. That fellow can save a forest.

The country is doing what it can to protect the forests, the lumber companies of necessity are doing the same. What part do you play in the scheme of things? The rangers are keeping the trails open for the hunter and the fisherman.

The water is kept in the lakes by protecting the forests. Partridge live better in shade-tree patches than in brules.

So when you cut down a tree, plant two. Forests take forty years to grow while a man grows old in forty years.. The fire losses of this year are equal, so far, to the amount of lumber legally consumed last year. Forests fires are a direct blow at the present and potential life of the Dominion.

The Minister of Lands and Forests, the Hon. Honoré Mercier has announced that a permit is necessary for the public to enter the forests.

Will the public follow the Minister or will it follow the preachers of the policy of catch, as catch can—the policy that throws thousands out of employment and lowers by many notches the property value of the Dominion.

If you don't know anything about the forests go to see them while they last. If you know, see them again, plant some trees and watch them grow. Come back in forty years and say with the forests ''Take a look at me now. You made me what I am for thirty cents.''

LUMBERING IN SUMMER

St. John, N. B., June 9. — Lumbering operations are to carried on during the summer months in several parts of the province, although in the past it has been the custom to cut logs and haul them during the winter months. During the season just closed the heavy snow in the southern portion of the province made it necessary to curtail the cut, and several operators found themselves without sufficient logs to keep their mills running during the summer. In order to supply their wants in this direction, several firms will have logging crews in the woods for the summer.

It is considered somewhat of a departure to cut logs during the summer months. The hot weather was supposed to slow up the work, and the hauling facilities were not considered so good as in the winter months. With modern appliances now available, it is said, the logs can be handled better in the summer than during the winter. It is said also that trees may be cut down closer to the roots when there is no snow to handicap the cutting operation.

AT WORK FOR CANADA BETWEEN JANUARY 1st AND JUNE 1st, 1923

The Canadian Forestry Association serves Canada from Coast to Coast. 181 public meetings were held in the past six weeks in the prairie provinces to help settlers establish shelter belts of trees about their farms and homes. Attendance totalled 18,081.

60 public meetings were held in Eastern Canada to organize the people as forest protectors. Motion pictures were used freely. One audience numbered over 2,000 persons.

The Forest Exhibits Car, a forest protection school on wheels, drew 50,000 people in April and May.

The Tree Planting Car, confined to the West, was equally popular.

From January to June, 78,000 copies of the Canadian Forestry Magazine have been performing an active educational service.

56,000 copies of our French newspaper ''L'Ami de la Foret'' have been distributed in forested districts.

100,000 copies of other varieties of forest protection literature have been carefully prepared and placed.

Hundreds of columns of newspaper articles have been written and placed in leading dailies and weeklies.

3,000 Boy Scouts have been made active allies of the Association's enterprises.

New motion picture films have been constructed.

The foregoing represent part of the educational service performed by the Canadian Forestry Association, a non-government, non-commercial society of progressive citizens.

R. H. CAMPBELL

Mr. R. H. Campbell who has been Director of the Forestry Branch of the Department of the Interior for the past sixteen years, has retired from active service. Mr. Campbell's work has brought him in close touch with the Pulp and Paper Industry. His sincere, delightful personality has won him a host of friends, who will regret the interruption of pleasant contact caused by his resignation. The editor is indebted to Mr. Campbell for much kindly assistance and the industry is grateful to him for years of devoted service and faithful endeavor in the field of forest conservation and the development of Canada's timber resources. His friends regret the serious accident which brought on ill health and retirement, but we are thankful he is still with us and hope he will live many years to enjoy a well earned respite from strenuous effort.

If a man could have half of his wishes he would double his troubles.

Technical Section

REVIEW OF RECENT LITERATURE

Akaline Processes

A-3 Bleached Straw Pulp. A. RETTORI. **Papeterie** 44, 1106-1109 (Dec. 25, 1922). Criticisms of some of the statements of Arnould's article. **Pulp & Paper** 20, 2022 (Dec. 21, 1922).-A.P.-C.

A-4 Some Causes for the Deterioration of the Color of Soda Pulp upon Ageing. C. S. HAMM. **Paper Trade J.** 76, No. 16, 47-48 (Apr. 19, 1923). The experiments described by the author show that in the ageing soda pulp the discoloration increases as the alkalinity of the pulp increases. Low alkalinity can be maintained by careful control of the washing operation and the use of sufficient sulphuric acid at the end of the bleaching operation.-A.P.-C.

A-8 F-3 Ash Utilization. S. ROSARIO. **Papierfabr.** 21, 126-127 (Mar. 4, 1923). The use of ashes from lignite, peat or wood in the pulp and paper industry is suggested. The author has successfully employed ashes for the production of straw pulp in South America.-J.L.P.

A-11 China Clay in Cornwall. W. TRETHEWAY. **Pulp & Paper** 21, 283-285 (March 15, 1923). Account of a visit to the Cornish clay mines of H.D. Pochin & Co., Ltd.-A.P.-C.

A-12 Casein and its Modification by Acid. E. SUTERMEISTER. .**Paper Ind.** 4, 1224-1228 (Dec. 1922). The author investigated acetic, phosphoric, sulphuric, lactic, muriatic, phosphoric and muriatic, acetic and muriatic, lactic and muriatic and natural soured caseins. He determined solubility in borax, adhesive strength, viscosity, moisture, and ash, and investigated treatment with acids. He concludes that a muriatic casein can be made to give as satisfactory results as a natural soured one, and that it is probably the amount of acid used in the precipitation rather than the kind that determines the quality of the casein. The difference in behavior between acid-precipitated and natural soured casein depends on the ash content of the former. This can be reduced, by suitable treatment to the same value as that of natural soured casein. By properly adjusting the amount of acid used, the precipitation of the casein from the milk and its acid treatment can probably be carried out in the same operation, and the logical place to do this is in the casein factories. If necessary it can be done by the user, and if mechanical losses are avoided in doing this, the casein as usually weighed out could be treated with acid, and, after washing, cooked up to the normal volume without considering the loss in the process.-A.-P.-C.

Alkaline Pulping Processes

F-4 Process for the Removal of Liquor and Washing of Soda Pulp. FR. KRENN. **Wochbl. Papierfabr.** 54, 698-699 (Mar. 10, 1923 . The pulp from a completed cook is blown into a diffuser and forces out most of the liquor retained by the pulp. A vacuum applied at the bottom of the diffuser facilitates this action. In this way the brown liquor is obtained in an undiluted condition for subsequent evaporation. The pulp is washed in the diffuser with either fresh or used wash water under pressure.-J.L.-P.

F-4 Evaporation of Spent Liquor in the Soda and Sulphate Processes. G. K. SPENCE. **Paper Trade J.** 76 No. 15, 209-213 (Apr. 12, 1923); **Paper Ind.** 5, 156-160 (Apr. 1923); **Paper Mill** 47, No. 17, 35, 40, 42 (Apr. 28, 1923); **Paper** 31 No. 26, 120-121, 128 (Apr. 18, 1923). A description of various types of equipment for evaporation of spent liquor in soda and sulphate mills, with a discussion of the importance of maintaining a high vacuum in multiple-effect evaporators. Results are given of the operation of evaporator rooms of four mills using Yaryan evaporators.-A.P.-C.

F-4 Comparison of Some of the Features of the Film and Submerged Types of Vacuum Evaporators. MARTIN L. GRIFFIN. **Paper Trade J.** 76, No. 15 213-233 (Apr. 12, 1923); **Paper** 31, No. 26, 56, 57 (Apr. 18, 1923). A brief discussion of some of the characteristics of each type, showing that there can be no standard practice but that each case must be viewed not only as a special problem in evaporation but in relation to its product and its relation to other features of the plant as a whole.-A.P.-C.

F-4 Evaporation of Pulp Waste Liquors. K. L. THUNHOLM. **Svensk Pappers-Tid.** 25, No. 13, (1922); **Paper** 31, No. 26, 149-156 (Apr. 18, 1923); **Pulp & Paper** 21, 204 (Feb. 15, 1923); **Paper Trade J.** 76, No. 13, 53 (Mar. 29, 1923).-A.P.-C.

F-4 Causticization of Soda Ash. J. HARROP and H. O. FORREST. **Ind. Eng. Chem.** 15, 362-363 (Apr. 1923 . Experiments on a laboratory scale gave the following results: Slaking the lime before causticization increases the conversion but slightly and greatly reduces the rate of settling. Increase in the amount of lime increases the percentage conversion but decreases the rate of free settling. Increasing the time of causticization increases the percentage conversion and decreases the rate of settling. The percentage of conversion is unaffected by the character of the lime as long as there is present 10% excess lime. On the other hand, high-calcium limes give better settling rates than limes containing appreciable amounts of magnesium, and air-slaking produces lower settling rates. The physical properties of the lime, such as apparent density, and size of particles, influence the free- settling rate, the more granular and compact the particles, the greater the settling rate.-A.P.-C.

F-0 The Chlorine Process Discussed. The Manufacture of Pulp by the Chlorine Gas Process. **Umberto Pomilio. Chimie et Industrie** 8, 41-45 (July 1922); **Paper Ind.** 4, 1670-1672 (March 1923). **Pulp & Paper** 20, 840 (Sept. 28, 1922); **Paper rade J.** 75, No. 16, 54 (Oct. 19, 1922). **Use of Chlorine in the Manufacture of Paper Pulp.** C. ARDISSON DE PERDIGUIER **Papeterie** 44, 866-873 (Oct. 10, 1922); **Paper Ind.** 4, 1672-1674 (March 1923); Pulp & Paper 20, 2047 (Dec. 28, 1922).-A.P.-C.

F-0 H-5 Continuous Process for the Production of Bleached Soda Pulp. A. OLIER, assignor to Societe Anonyme des Etablissements A. Olier. Can pat. 227 859, Jan. 9, 1923. Same as Fr pat. 523,871, V. Bernot and R. Fournier. **Pulp & Paper** 20, 462 (June 1, 1922), **Paper Trade** J. 74, No 23, 95 (June 8, 1922). A.P.-C.

F-0 The Chlorine Process for the Manufacture of Paper Pulp. RAYMOND FOURNIER. **Papier** 25, 481-490 (Nov. 1922). Early attempts at using chlorine for the manufacture of pulp are reviewed. The DeVains and Cataldi processes are described and their merits and demerits brought out. A.P.-C.

F-0 Chlorine for Pulp Manufacture. ISMAR GINSBERG. **Chemical Age (N.Y.)** 30 (Nov. 1922); **Paper** 31, No. 3, 10-11 (Dec. 13, 1922). A review of the Pomilio (Cataldi) process for producing pulp from wood and grasses.-A.P.-C.

Bleaching

H-1 The Testing of Bleach Liquor. R. E. GEGENHEIMER. **Paper Mill** 47, No. 9, 14, 16 (Mar. 3, 1923). A description of the Mathieson bleach liquor testing apparatus. The pressure of oxygen liberated by the interaction of the bleach liquor and of hydrogen peroxide is measured by means of a mercury gauge which is calibrated in any convenient manner, preferably to read directly in grams of available chlorine per liter o fliquor. The gauge is calibrated at 20° C., and 760 mm., and tables are provided for correcting to this temperature and pressure when readings are taken under different conditions.-A.P.-C.

H-5 Bleaching Pulp at High Consistency. R. A. HAYWARD. **Paper Trade J.** 76, No. 15, 221 (Apr. 12, 1923); Paper Ind. 5, 161-162 (Apr. 1923). (Compare R. B. Wolf, **Paper Trade J.** 75, No. 22, 57 (Nov. 30, 1922). Results of mill scale operations with a Wolf bleacher are outlined. Best results were obtained when the bleaching temperature did not exceed 85° F. There was 10 to 15° F. rise in the bleaching due to the heat of the reaction, so that only in the most severe winter weather was any steam required to maintain the temperature. The bleach consumption when operating at 20% consistency was over 25% lower than at 6% consistency; so that either average strength can be obtained with low bleach consumption or else inferior grade wood can be cooked to give high strength with relatively low bleach consumption. Poor hemlock (some of which had lain in the pile up to 10 years) was put through the wood room without any special care in cleaning and a clean grade of pulp was made from it. Working on hard-bleaching stock, the overall shrinkage was 5.3% for hemlock and 4.04% for spruce, and the chemical shrinkage 4.3% and 3.11% respectively. From previous shrinkage tests made on stock bleached at thinner consistencies, a shrinkage of about 10% would have been expected. Tests with soda and sulphate stocks showed a low shrinkage and low bleach consumption as compared with results obtained when bleaching at 4% to 5% consistency.-A.P.-C.

H-0 Reduction of Bleach Cost by Chemical Control. GEORGE M. TROSTEL. **Paper Trade J.** 76, No. 17, 52 (Apr. 26, 1923). The important factors for producing easy-bleaching soda pulp are (1) Proper amount of alkali required for the particular wood so that without overcooking the process can be carried to the point when the complete removal of non-cellulose material is assured; (2) Complete removal of all black liquor and dissolved non-cellulose material. Bleaching can be accomplished more economically if the bleaching properties of the pulp are known, and these can and should be determined before the stock reaches the bleaching system. The most important benefits are: uniform color, no waste of bleach, and no over bleached pulp. A.P.-C.

Beating

K-4 Process for the Production and Purification of Pulp from Wood and Similar Material. E. SCHMIDT. Fr. pat. 546,556, Aug. 26, 1922. **Papier** 25, 541 (Dec. 1922). The material is treated with chlorine dioxide dissolved in a solvent of such a nature that the lignin is dissolved out after its transformation by the chlorine dioxide. Dilute acetic acid is suitable for the purpose. (Compare Schmidt and Duysen, **Pulp & Paper** 20, 676, Aug. 10, 1922; **Paper Trade J.** 75, No. 5, 54, Aug. 3, 1922; and Schmidt and Graumann, **Pulp & Paper,** 20, 1002, Nov. 16, 1922; **Paper Trade J.** 74, No. 26, 50, June 29, 1922). A.P.-C.

K-4 Production of "Mechanical Cellulose." H. STEINHILBER. Can. pat. 227,795, Jan. 9, 1923. **Cyperaceae, gramineae** or **typhaceae** are subjected to a rubbing and pressing action whereby the parenchymatous cells are separated from the raw fibers and the latter are liberated by grinding or rubbing from the incrusting substance in the presence of water. This can be carried out in a beater in which the flybars and bedplate knives are rounded or blunted in such a manner as to avoid a cutting action. The material may be subjected to a preliminary natural or artificial retting process. The grinding or rubbing action is continued during bleachiing.-A.P.-C.

K-7 Heat Treated Steel is the Best for Beater Flybars and Bedplates. W. F. EBBING. **Paper Ind.** 4, 1715-1717 (March 1923). Brief discussion of the advantages of heat treated carbon and alloy steels for flybars and bedplates.-A.P.-C.

K-7 New Type of Beater. ARLEDTER. Fr. pat. 548,578. The trough is preferably completely enclosed, and a static head is maintained at the inlet side of the beater roll by means of a vacuum, while pressure may be applied on the surface of the pulp at the outlet side. It is claimed that there is a great saving in power and that stock can be beaten at a consistency of 22% to 30%.-A.P.-C.

K-7 Practical Notes on Beater Operation. Wochbl. Papierfabr. 53, 3775-3778 (1922.) **Paper** 31, No. 22, 7-10 (Mar. 21, 1923). A discussion of the factors influencing power consumption, and especially of the nature of the raw materials. A method is described for comparing the efficiencies of beaters.-A.P.-C.

K-19 Raw Stock or Paper for Coating. NORMAN CLARK. **Paper Trade J.** 76, No. 15, 170-171 (Apr. 12, 1923); **Paper Ind.** 5, 153-155 (Apr. 1923); **Paper Mill** 47, No. 15, 222,224 (Apr. 14, 1923); **Paper** 31, No. 26, 61-62 (Apr. 18, 1923.) A discussion of formation, dirt, color, slack edges, thickness, fuzz, finish, curling and feel in raw stock for coating. A table is appended showing under each grade of coating paper the weight, furnish percentage, and relative sizing of papers required for each purpose.-A.P.-C.

K-23 Method of Marbling Cheaper Grades of Paper. F. P. REED and C. NELSON, assignors to American Coated Paper Co. Can. pat. 227,077, Dec. 12, 1922. The color spattering devices (brushes or bristles which take the color from a roll rotating in a color bath, and which flick it on to the moistened paper) are arranged so that the various colors (two or more) are delivered simultaneously to the same area of the paper. Some of the color is thus delivered in the direction of travel of the paper and the remainder in the opposite direction.-A.-P.-C.

STATISTICS OF PAPER INDUSTRY TO BE COMPILED BY A. P. & P. A.

The American Paper and Pulp Association has taken over the task of collecting statistics on the paper industry, abandoned by the Federal Trade Commission. This was the announcement made to the paper industry this week by Dr. Hugh P. Baker, Executive Secretary of the Association, and plans are now being formulated for doing this work.

The success of the effort will be dependent, of course, upon the co-operation of the mills of the country, but as they have previously reported to the Federal Trade Commission, it is not thought likely that they will be less willing to file the same statistics with an organization of their own industry.

The governmental form of report will be used in making reports to the Association, the only difference being that the report blank will carry the name of the American Paper and Pulp Association instead of the Federal Trade Commission.

The details of the collection of the statistics are rapidly being worked out but of course there will be some delay in getting out the figures for June.

Inasmuch as the American Paper and Pulp Association is a federation of associations representing the different paper making groups, the collection of the statistics will be done as far as possible through these group associations, and the News Print Service Bureau which, as it includes Canadian mills also, is not a member of the American Paper and Pulp Association. The newsprint figures will be furnished the American Paper and Pulp Association through the News Print Service Bureau, exactly as is planned for the Association's affiliated groups.

This method of collecting the statistics, therefore, will avoid the duplication of reports by mills belonging to the group associations, but will continue the same form of reports previously made by the outside mills to the Federal Trade Commission. To this extent the collection of the statistics by the American Paper and Pulp Association will be a simplification of the previous method of compiling production figures for the industry.

TRADE SAGS A BIT IN JAPAN

Owing to the high prices of news print papers in Japan during the early part of the year traders finding a goodly margin of profit by importing foreign products, resorted to overseas markets. As a result, the importation of foreign papers which had shown a declining tendency during the latter half of the previous year owing to a sagging market and to strikes in Sweden and Norway, has again become brisk.

The quantity and value of imports since January were as follows:

	Quantity * Kin	Value † Yen
January	4,436,594	824,109
February	4,175,532	856,266
March	5,802,721	1,072,126
April	6,612,254	1,209,615

* A "kin" is equal to 1.323 lbs.

x One yen equal to about 50 cents.

The domestic paper manufacturers who raised their prices foreseeing the lack of supply and the increase of demand within the country, now met the competition of the foreign goods which were threatening the sales of the domestic makes.

The mills have been working in full swing, but, owing to the element just mentioned, the supply has overtaken the demand and the stocks of the paper manufacturers are growing larger and larger. The decrease of sales was most significant during the month of April. The following is a list of the quantity of output against sales for the months, beginning January:

	Output lbs.	Sales lbs.
January	57,119,000	55,100,000
February	57,637,000	63,941,000
March	61,624,000	71,353,000
April	63,893,000	61,169,000

As a result of the situation, the paper manufacturers here not only are unable to maintain the prices set by themselves when the consumers were in the hole but have to agree at lower prices to counteract the competition of the foreign goods. Besides, at the present state of affairs it is likely that the paper mills will be obliged to limit their output to a certain extent until such time as to start work in full blast.

NORWEGIAN STRIKE IS SETTLED

The strike in the Norwegian Pulp and Paper mills has been settled, a telegram to that effect having been received by the Canadian Pulp and Paper Association. According to mail advices, the trouble was the result of sympathetic action in connection with a dispute regarding a few men engaged in floating logs, the opportunity being taken to press for demands made for a number of years.

The strike was followed by a lockout, and presumably this has been one factor in the settlement of the dispute.

The result of the trouble was the raising of prices in England.

Norway is an important producer of paper and pulp. In 1922 her exports of printings amounted to 163,224 tons (short) while "packings" amounted to 74,918 tons. The United Kingdom is the principal market for printings and in 1922 she received 35,000 tons under this classification, followed by France with 30,000 tons; the U. S. A. with 11,000 tons; Australia 16,500 tons; India 10,000 tons and China 5,500 tons.

Of Norwegian wrapping paper in 1922, Great Britain took 37,000 tons or nearly one half of the total exports; China was next with 8,000 tons, Australia, 6,600 tons and the U. S. A. and France about 6,000 tons each.

In the first four months of this year Great Britain's imports of newsprint from Norway amounted to 6,753 tons, while imports into the U. S. A. were 14,328 tons.

Last year Norway exported 224,009 tons mechanical pulp (dry wt); 129,000 tons bleached sulphite; 71,000 tons unbleached sulphite and 16,000 tons sulphate.

For the first four months of this year the U. S. A. imported from Norway 17,572 tons mechanical; 8,292 tons unbleached sulphite; 22,816 tons bleached sulphite and 4,200 tons sulphate.

Total imports into the U. S. A. from Norway in 1922 were 9,227 tons mechanical, 32,630 tons unbleached sulphite; 43,852 bleached sulphite and 9,856 tons sulphate.

PULP AND PAPER NEWS

Mr. Norman R. Lang, managing director of the Powell River Company Limited, Vancouver, B.C. was in Montreal last week.

Mr. T. J. Stevenson of the Riordon Sales Corporation, Limited, Montreal and Mrs. Stevenson are now holiday-making at Old Orchard.

Mr. Edwin Crabtree, Montreal representative of the Bathurst Company Limited and the Bronson Company has been on a business trip to New York, Philadelphia, and other American cities.

Sir Frederick Becker, of Becker and Company Limited, London, England, is about to pay another visit to Canada. This is no doubt in connection with the projected extension improvements of the mills of the Bay Sulphite Company and the Chicoutimi Pulp Company.

The Edwards Lumber and Pulp Company, Limited, which has purchased the Colonial Lumber Company's property, propose to erect a groundwood mill at Pembroke, Ontario.

The first caterpillar type of continuous grinder, is being installed at the Kenogami mill of Price Bros. This grinder, which is claimed to have several advantages as compared with the magazine type, is manufactured by the Waterous Engine Works, Limited, Brantford, Ontario.

Brig. Gen. J. B. White, forestry director of the Riordon Company is recovering from a surgical operation.

The selection by the new Premier of Ontario, Howard Ferguson, of James Lyons, of Sault Ste. Marie, Ont., as Minister of Lands and Forests, recalls the fact that seventy years ago, five brothers living in England decided to take advantage of the opportunity of the financial advantage that Canada held out, and that the father of the new cabinet minister was the only one to survive shipwreck on the way out. James Lyons was born and raised on the farm of his father near Virginia, Ont. He lived the usual life of the farmer up to the time he was nineteen, when he started out for himself. The Soo attracted him and he landed there twenty-three years ago. For five years he was superintendent of one of the Lake Superior Corporation's plants, but resigned to engage in the grocery business for himself. He was successful as he has been in all the business enterprises he has engaged in since. Realizing the future value of Sault Ste. Marie and Steelton real estate he took advantage of every opportunity to invest his earnings in it, with the result that today he is rated as one of the financially strong men of the community. Municipal ownership of public utilities is his slogan. He was for four years mayor of Steelton, before its amalgamation with the Sault, and for the past two years has been an alderman of Sault Ste. Marie. He has been president of the Board of Trade for two years and is a prominent Rotarian.

During the month of June the Abitibi Power and Paper Company turned out approximately 12,270 tons of newsprint, being an average of 471.9 tons per day. This average is over eight tons per day higher than the former record made during the summer of 1922. The blue ribbon week was the 7-day period ending June 30, when an average of 477.6 tons of paper was turned out, or 3 tons per day higher than the best previous record.

The tug G. R. Gray of the Spanish River Pulp and Paper Mills, Limited, made the trip from Puckasaw to Sault Ste. Marie, Ont., a distance of 150 miles, in twelve hours, in an effort to save the life of Chris Thompson, who was seriously ill. Thompson, however, died, after the arrival of the tug. The trip is considered a record one.

The Reforestation Committee of the York County Council has decided to purchase Lot 28, concession 8, Whitechurch, for purposes of reforestation. The land, which bears considerable timber, is 197 acres in extent. The price is $4,000. The committee recommended that 200 acres of such land be purchased every five years.

The National Pulp Corporation, Limited, Hamilton, Ont., has been granted an Ontario charter with power to carry on the business of re-pulping paper and rags according to a secret process and formula of Judson Culp and to acquire exclusive rights for the Dominion of Canada. The authorized capital is $800,000 and the provisional directors are Judson Culp, O. A. McPherson and A. R. McPherson, Hamilton.

Boxboard Products, Limited, has been incorporated at London, Ont., to take over the assets of the Security Egg Case Filler Co., Limited. The company, which is capitalized at $150,000, is also empowered to manufacture pulpwood and paper and to engage in printing and lithographing. The provisional directors are W. R. Nickle, R. D. White, G. T. Shipman, T. J. Murphy and A. H. Murphy, all of London.

John Ebbels, of the American Writing Paper Company, Holyoke, Mass., was a Toronto visitor last week.

J. Collins, of the B. D. Rising Paper Company, Housatonic, Mass., was a caller on the Toronto paper trade last week.

John Hewitt, head of Paper Sales, Limited, Toronto, has returned from a business trip to Montreal.

F. C. Clarke, treasurer of the Mattagami Pulp and Paper Company, Limited, head office Toronto, which is still being operated by an official receiver, states that the operations of the organization at Smooth Rock Falls, Ont., are now proceeding on a satisfactory basis. The demand for pulp continues good and the operating of the mill at capacity is reducing high cost inventories. When liquidation of the present supplies of wood are complete and new wood is obtained at the lower costs now prevailing, the company will be able to make a reasonable profit, especially if the selling price continues to show improvement. The time is approaching when an effort will be made to re-finance the company's business. For the present most of the holders of bonds and debentures have handed over their securities to protective committees who are working together in their interests.

Jobbers handling the Howard Smith paper lines were supplied last week with new price lists dated July 4. There are no drastic changes in prices and adjustments are confined to those previously outlined in these columns.

W. H. Dixon, managing director of Peter Dixon & Co., large newsprint manufacturers in Great Britain is now in Canada. Last week, Mr. Dixon visited a number of the Ontario newsprint and other paper mills, including those in the Niagara district.

George Carruthers, head of the Interlake Tissue Mills, Limited, announced in Toronto last week the appointment of Joseph Cathcart as superintendent of the company's mill at Merritton, Ont., succeeding Peter Rausch, who recently resigned owing to ill health. Mr. Cathcart is an expert paper maker of wide experience, especially in color work, he having been associated with the Crystal Tissue Mills of Middleton, Ohio, for a number of years as general superintendent.

W. D. Carmichael, of Sydney, Australia, who is just now in Canada, was in Toronto last week after having been to Ottawa where he interviewed the Dominion Government in regard to reciprocity of trade between Canada and Australia with special reference to paper products.

The proposed site for the plant of the Great Lakes Pulp and Paper Company, Fort William, was again to the fore last week when application was made to the Ontario Government by the company and granted, for formal endorsation of a plant site three miles up the Kaministiquia River, on the north bank. In view of the agreement entered into with the company which authorizes plant construction "on the Mission site or other site" the Government regarded itself in honor bound to approve it. A delay in definitely fixing the site was asked pending a hearing of the interests of Shunia and other Head of the Lakes municipalities. According to Government understanding of the Great Lakes Company application, the prompt approval by the Government of the new site means an immediate commencement of construction upon the big pulp and paper plant which is expected to put the Nipigon power development upon its feet financially. Shunia, with other Head of the Lakes municipalities, entered into keen competition for the Great Lakes industry, and won out in a bitter fight before the Private Bills Committee in the matter of transfer of certain lands from Port Arthur upon which the industry was to have settled with certain taxation advantages.

A pleasant little function took place on July 7 at the Port Arthur mill of the Provincial Paper Mills, Limited, when the employees of the plant were presented with the shield of the Ontario Pulp and Paper Makers' Safety Association, which is incorporated under the Workmen's Compensation Act. The shield is for annual competition, and is held by the plant having the fewest accidents during the year. The Port Arthur plant record is 20 non-fatal accidents, involving a loss of 336.5 work days, which is equal to 1.75 days per full time worker. The shields are given in two classes, one for plants of 200 or more employees, and the other for plants with less than 200. Both were won by the Provincial Mills, Class A by Port Arthur, and Class B by the Georgetown Division.

Further information concerning the Atlantic Pulpwood Company, Limited, which was incorporated on May 5 under the Companies' Act of the Province of New Brunswick for the purpose of carrying on business in pulpwood and timber lands, indicates that the company represents a combination of the business formerly carried on by W. Roy Smith and Grey B. N. Keith. Both of these gentlemen have been engaged in the pulpwood business in Nova Scotia and New Brunswick for several years. The company proposes to handle cargo, as well as rail shipment wood and is maintaining a head office at St. John and a branch office at Annapolis Royal, N.S. The capitalization is $49,000.

Historians in the Niagara district recalled the fact on July 13 that just twenty-five years ago Carl Riordon, of the Riordon Paper Mills at St. Catharines, Ont., concluded arrangements with the municipality of Hawkesbury by which a very extensive pulp and paper mill was to be erected at Hawkesbury. According to the papers of a quarter a century ago "the establishment will cost in the neighborhood of $200,000 and will employ about 100 hands. Mr. Riordon has also purchased extensive timber limits from Hon. J. K. Ward."

Hon. T. W. McGarry, former Provincial Treasurer of Ontario denied the report in Toronto that he was severing his connection with the Whalen Pulp and Paper Company of British Columbia in order that he might become Financial Comptroller of Ontario, a newly-created position which some one is to fill in the Ferguson administration.

Cheques were mailed out from the head office in Toronto of the Spanish River Paper Mills, Limited, last week, to shareholders of record June 30. The payments represented dividends at the rate of 1¾ per quarters, or 7 per cent per annum.

J. G. Gibson, secretary of the Spanish River Pulp and Paper Mills, Limited, head office Toronto, is spending a month with his family at Port Kewatin.

C. W. Anderson, superintendent of the Kinleith Paper Mills, St. Catharines, Ont., recently addressed the Commercial Stationers' Association of Toronto, giving a description of the various methods of paper manufacture, with special reference to the Kinleith papers. It was pointed out by Mr. Anderson that the processes may vary to some extent, according to the different classes of paper produced by various plants, such variations applying to makes ranging from blotting paper and newsprint to book and commercial paper for other purposes.

C. W. Graham, president of the Buntin, Gillies Co., Hamilton, Ont., has returned from a three months' trip to Great Britain and the Continent.

The Canadian Pulp and Paper Association will cooperate with the Federal Government at Ottawa in exhibiting productions of the industry at the British Empire Exhibition which is to be held in London, England, in 1924, starting in April and continuing for six months. All the Canadian paper companies are being invited to send samples which will be suitable for export trade. There will also be a varied display in the Federal exhibit of the commercial woods of the Dominion, some in the rough and others in the finished state. The lumbermen and pulp and paper men are desirous of seeing that these lines of activities are well represented.

It is not the revolutions which destroy the machinery, but the friction.

UNITED STATES NOTES

The property of the bankrupt American Strawboard Company will go on the auction block this week in Chicago, according to an announcement of Frank M. McKey, trustee in bankruptcy. The property to be sold includes vacant real estate at Chesterton, Md., the plants of the Company in Circleville, Ohio, Noblesville, Ind., Quincy, Ill., Wilmington, Ill., Winchester, Va., real estate at Barberton, O., Tiffin, O., all raw material goods in process of manufacture, etc.

In a survey of the employment situation made public by the Department of Labor last Friday, the paper and printing industry showed the largest decline, with a decrease of 4.4 per cent. The figures were based on reports from 1,428 concerns employing 500 or more persons each and in sixty-five industrial centers. The comparisons take June employment as against the reports for May.

Production statistics compiled from a countrywide canvass by the Federal Reserve Board indicate that the industrial activity of the United States thus far during 1923 has been the greatest in history, except for the last three weeks. The rate of output of manufacturing plants dealing in seven basic lines averages six per cent above the rate of output in 1919, a boom year. The board's canvass dealt with the manufacture of foods, tobacco, lumber, paper, cloth, steel and the refining of petroleum. The general average of production for all commodities was greatly exceeded by paper, textiles, steel and oil. The greatest rate of increase over the 1919 production was shown by petroleum refineries which reported an average increase of 51.4 per cent. in output in the first four months of 1923. Paper came fourth in the list with an average increase of 15.5 per cent.

A contract for the construction of a $2,000,000 paper mill near West Monroe, La., has been awarded to the Morton C. Tuttle Company of Boston, Mass., by the Brown Paper Company, Inc., of Monroe. The latter concern was recently organized by pulp and paper manufacturers of Orange, Texas and vicinity.

The Waste Paper Merchants Association of New York, representing the bulk of the $15,000,000 waste paper packing industry of the city, has petitioned the New York State Attorney-General to bring an action vacating the charter of the Salvation Army on the ground that as a religious and charitable corporation it is violating the provisions of the Act under which it was created by conducting an extensive waste paper business. The petitioner is Charles McBride of the Wilson Paper Stock Company, as chairman of the Waste Paper Merchants' Association committee on complaints against the Salvation Army. S. D. Spector, attorney for the merchants explains that the association has no quarrel with the Salvation Amy as long as it collects paper in its house to house canvass for nothing, but the members haven't a chance to compete when they go into the market for profit. The Army pays no taxes of any kind and obtains much of its unskilled labor in exchange for a night's lodging or for a very nominal sum. The dealers, on the other hand, said Mr. Spector, are obliged to pay $5 a day for men and women to sort materials.

The Salvation Army is now reconstructing a seven story building in West Forty-eight Street, New York, with $30,000 obtained by salvaging waste paper from the households in the city. This "house that waste paper is building," as the Army calls it, will contain dormitories and working facilities for eighty "down and outers" at a time and will include a complete store in which the poor will be able to buy salvaged and repaired clothing, furniture and household goods at nominal prices. The Army has two such institutions in New York now where the inmates support themselves by going from house to house salvaging waste paper and by repairing discarded household goods.

Within the last few years the use of waterproof building paper has greatly increased. A fact which has always been recognized by architects now seems to be much more generally recognized by builders, that a few dollars expended for good waterproof building paper actually keeps out drafts and dampness, reduces fuel bills and has a tendency to preserve the life of the whole structure of the building.

An instance of the efficacy of the sprinkler system was shown in the recent fire in one of the Knowlton Brothers Paper Mill buildings at Watertown. Fire broke out in bales of waste paper on the top floor of this building. It seemed a big fire was imminent and preparations were made by fire-fighters to battle with blaze which it was thought might end in a gutted building. However, the plug on the automatic sprinkler melted and a deluge of water extinguished all signs of flames, leaving only heavy clouds of smoke for a time. Due to this the blaze was limited to an area of about 50 square feet. The firemen were frank in declaring that had it not been for the sprinkler system the entire top floor of the structure would have been a mass of flames before an adequate fight could be launched, and that it might have been difficult to prevent the fire from spreading throughout the entire plant.

The store house of the A. L. Adams Paper Company, Baldwinsville, Mass., was burned last Friday. The frame building contained a large stock of finished and unfinished paper and a considerable amount of sulphite. In the absence of Mr. Adams no one connected with the company was prepared to estimate the loss.

Forest fires sweeping up the western slope of the Bitter Root Mountains the latter part of last week destroyed the towns of Mace and Burke, east of Kellogg, Idaho. A thousand persons are homeless in the two towns, one of which was completely wiped out by the fire and the other all but destroyed. Damage was estimated at between $300,000 and $400,000.

If you want to know who the Pulp and Paper Mill Superintendents are and the good work they are doing, get a copy of the annual program from Secretary, P. C. Barrett, 7 McNair Bldg, Kalamazoo, Mich. This a very fine piece of work, both as to appearance and contents.

We fail to get much benefit from many blessings because we do not try to impart them to others.

NEW LINE OF CANADIAN BUILT STEAM DRIVEN AIR OR GAS COMPRESSORS POSSESSES MANY UNIQUE FEATURES

A new line of steam driven air or gas compressors ranging in size from 67 to 1083 cu. ft. piston displacement per minute has recently been placed on the market by the Canadian Ingersoll-Rand Company Limited, 260 St. James St., Montreal, Canada.

These machines, known as the class "FR-1" are the steam driven companions of this company's class "ER-1" Belt Driven Compressors and like the latter are of the single stage, straight line centre crank dust and dirt proof type with automatic lubrication of both running parts and compressing end.

They embody every refinement of modern compressor design including a number of features which make them as nearly automatic in action as any machine of this type can be expected to be. This is an important consideration in any compressor but is even more essential in the case of small and medium sized units which are often operated in isolated locations where but little attention can be given them. Large machines on the other hand are generally located in a central power house under the supervision of an expert engineer. For this reason the class "FR-1" Compressors are recommeded for use in small mines, quarries, on contract jobs, in foundries, machine shops, industrial plants, etc., as well as for use as auxiliaries in large power plants.

In general the Class "FR-1" Compressor consists of a plate valved compressing cylinder direct-connected to steam engine with balanced piston valve and automatic cut-off control, a design which makes it possible to operate with high pressure and superheated steam as well as the moderate pressures more common in the past. This feature alone ensures a steam economy at all pressures not heretofore attainable.

The main frame as previously mentioned is of the enclosed type the bottom part of which forms a reservoir for the combined splash and flood lubrication system. It is fitted with removable side and crank end covers, which are not bolted on, but are retained by lips on the frame casting. Removal of these covers permits inspection or adjustment of all running parts. The cross-head guides are of the bored type and the design of the frame provides for an oil stuffing box near the cylinder end of the frame, which prevents any chance of crank case oil entering the compressing cylinder end of the main frame and in the trunk piece interposed between the steam and air cylinders provides for adjustment of all stuffing boxes when the machine is running.

The main frame and trunk piece are mounted on a substantial cast iron sub-base which lends rigidity to the entire structure, makes the machine a complete self-contained, accurately aligned unit and also forms a support for the single rocker arm which guides the valve rod.

There are no guide blocks or other sliding surfaces in the piston valve gear.

The main bearings are of very heavy construction and are provided with removable die-cast shells or liners of genuine babbit metal which can be removed and renewed in a few seconds at small cost. Due to the area of the bearings and the complete circulation of oil through them at all times, however, the shells last for very long periods without appreciable wear.

The crank-shaft and connecting rods are solid one-piece drop forgings accurately machined and heat-treated. The connecting rod is of the solid end type with renewable and adjustable boxes in both cross head and crank shaft ends. The crosshead is of the cylindrical type, of box construction with adjustable bored and turned shoes.

Pistons are of the box type with broad faces and are securely fastened to a turned and ground steel rod.

Oil is distributed to all of the running parts by throwers on the crank webs which lift or throw the oil against baffles from which it runs to all wearing surfaces. This system, now widely used was originated by this Company more than twenty years ago and is probably the simplest, most effective cleanly and economical ever devised.

Lubrication of steam and compressing cylinders is provided for by a double compartment adjustable sight feed mechanically operated lubricator.

The piston valve is provided with two piston rings at each end and operates in a renewable bushing. With this type of valve there is no rapid wearing or cutting and the valve chest stuffing box is only subjected to exhaust pressure as steam is admitted to the centre of the valve and exhausted from the ends.

Regulation of Class "FR-1" Compressors is regularly provided for by an Ingersoll-Rand "Wide Range" Automatic Cut-off Flywheel Governor and either "A-39" Inlet or the new Ingersoll-Rand "Free Air Unloader."

The Fly Wheel Governor is somewhat similar to those used on high speed automatic steam engines and varies the point of cut-off of the steam in the steam cylinder in accordance with variations in boiler pressure or in the load. This governor provides for speed adjustment for anything between full and one half speed while the "A-39" Inlet of the "Free Air Unloader" governs the amount of air compressed according to the demand. Other combinations are also furnished for use under special conditions

Another feature of these machines worth attention is the ease and rapidity with which they can be converted to belt drive or used as a combined belt and steam driven unit. Due to the extent of hydraulic electric development in Canada it sometimes happens that local conditions may make it advisable to change over to motor drive or to use a combination of the two for stand-by purposes. This can be more readily accomplished on these machines than any similar type.

The Canadian Ingeroll-Rand Company also announce their bulletin K-312, describing these machines which are produced at their Sherbrooke plant. This catalogue contains 28 pages and numerous illustrations covering these machines and should be of value to anyone interested in steam driven compressors for compressing air or commercial gases.

The Canadian Ingersoll-Rand Co., Limited, Que., have just issued a new descriptive bulletin covering their Cameron double suction, volute centrifugal pumps. The illustrations are numerous and clearly set forth the special features of these pumps, while the text contains much useful information on the mechanical details, tests, dimension table and part list. The book is known as No. 7350-C, and will be gladly forwarded to any interested reader on application.

The Markets

CANADIAN TRADE CONDITIONS

Montreal, July, 17. — Locally, the paper trade is on the slow side, and some jobbers have complained of the difficulty in securing orders of any appreciable volume. Besides that, collections in the paper industry and also in other lines are poor. This is true of many places in the province, and some travellers state that it has been found imperative to curtail credits until the amounts now owing are reduced.

Taking a wider view of conditions as they are likely to affect business in the near future it is satisfactory to note that the crop reports from the West are very optimistic, a record harvest being predicted. Should the expert opinions prove to be true, we may look for a revival in the West, and increased buying of Eastern commodities.

The newsprint mills are busy, and so far there is no indication of an appreciable falling off in demand which usually marks the summer. The industry is on a very firm basis, and will be able to take care of any additional tonnage which will come on to the market in the near future.

In other lines the mills are fairly well supplied with orders. A feature of the week is the reduction of about $10 per ton in boards, the prices now being: Chipboard $65; strawboard $65; filled board $80; single manila lined $85; double $90. American prices have later dropped, and there is an inclination to invade this market in a more aggressive fashion.

With regard to the pulp section, groundwood continues to be firm, with only a small amount on offer. Some Canadian mills are idle, partly for lack of water and partly because of wood shortage. Bleached sulphite is maintained at from $90 to $100, according to grade. The chances are that the pulp market will be fairly steady during the balance of the year. The industrial troubles in Scandinavia counterbalanced any chances of an over supply of pulp, and have made for firmer markets, but the strike is reported to be over.

There is a fair demand for pulpwood at unchanged prices. Dealers interested in the sale of wood to American mills are concerned at the prospect of an embargo on the export of the wood. Some of them have considerable stocks, and they naturally feel that they should receive long notice of any intention to enforce an embargo. Some Canadian mills, particularly those with American affiliations, are opposed to a prohibition, principally on three grounds. One is that it will restrict the supply of wood to their American mills; a second that it will provoke retaliation, possibly in the form of tariffs on pulp and paper, thereby imperilling Canadian industry; and the third, that an embargo will force more American mills to locate on this side, thereby increasing the production of newsprint to a point which may upset the market and force down prices. It is argued that such new mills will be of a more efficient type than those which may be displaced in the States, the result being a greater volume of tonnage for which it will be difficult to find customers.

Ontario Market News

Although the Ontario paper trade is still suffering more or less from lassitude the fact remains that many of the jobbers were favored with better business during the early part of July than they were at the beginning of June. The testimony of most of the distributors, however, is that trade is spotty and that a good week's volume of business is usually followed by a falling off in orders, while no month this summer has bulked as large as was desired or expected. That there will be any great improvement until the holiday season is over is not generally looked for and some paper men are inclined to the view that it will be a case of hang on until September when all lines of trade will regain their old activity. While the paper trade generally in Ontario has been quiet this summer it has not been nearly so depressed as some other lines, for, despite the quiet period in trade generally there has been enough paper consumption to keep both mills and jobbers operating, although at considerably reduced capacity. Every manufacturer and every distributor apparently has been able to line up a fair share of business and while the orders individually have been small they have bulked sufficiently large to keep the mills running and the jobbers operating, if on a reduced basis. At the present time it is apparent that jobbers' stocks are low and it is certain that they are buying very cautiously.

Mills report only a fair amount of business passing and although some of them have orders ahead they are not booked very far in advance. However, there is sufficient business in sight to keep book, bond, ledger, tissue and other mills operating, although it is admitted that orders are not flowing in very freely just now. There has been some improvement in the paper box industry although business in this line has not yet reached the volume enjoyed a few months ago. Manufacturing stationers and envelope manufacturers are doing a fair business and a steady uotput from the tissue and toilet mills is finding a fairly ready market. There has been some improvement in the paper box industry although business in this line has not yet reached the volume enjoyed a few months ago. Manufacturing stationers and envelope manufacturers are doing a fair business and a steady output from the tissue and toilet mills is finding a fairly ready market. There is also a slightly improved condition in the wrapping and kraft paper departments which have been running light of late.

PULP. — Groundwood pulp is holding fairly firm although one prominent buyer in the Toronto district is responsible for the statement that both the manufacturing mills and the buying paper mills are increasing their stocks under the impetus of good water conditions for pulp output. Makers of chemical pulps are having no difficulty in disposing of their product although generally speaking the market is quiet. Groundwood is quoted at $38.00; bleached sulphite at $90.00 and up; unbleached sulphite at $65.00 and news grade around $60.00.

DROP IN BOX BOARD. — Ontario jobbers and paper box manufacturers have been advised by the paper board mills of a $10 a ton drop in board which is now in effect. This applies to all the grades and is largely due to the reduced price of waste paper and also to some extent to American competition. The new prices now in effect are as follows: chipped board, $65.00; straw board $65.00; news vat lined, $75.00; filled pulp board, $80.00; folding pulp board, $90; white patent coated news back, $110; white patent coated machine back, $120.

NEW YORK MARKETS

New York, July 14. — (Special Correspondence) — While latest available figures show that the statistical position of the paper industry in the United States is exceedingly strong and that mills are operating at a surprising rate of capacity for this time of the year, there is no gainsaying that retail demand for most kinds of paper is much quieter at present than it was a few weeks ago. Consumers have let down in their buying to a pronounced degree. Orders are placed today only when the need for paper is pressing, and there is little disposition among buyers to anticipate. However, this applies only to certain kinds of paper. Newsprint is wanted in record tonnage, and there is a steady movement of large volume of book papers. Doubtless the movement of these descriptions of paper toward contract customers is exceeding anything the industry has ever before witnessed at this season, and of course the heavy production of news and book papers serves to send mill output figures for the industry as a whole up to high levels.

Newspaper publishers are taking all the newsprint they have coming to them on contract and it is nothing unusual for consumers to come into the open market for additional supplies. Spot lots of print paper are far from easy to locate and sellers in a majority of instances are demanding premiums in price. Sheet news also is wanted in good quantities and ruling prices are close to the basis prevailing on roll news. Moreover, a good many mills are not producing sheet news, having all that they can do to fill their commitments in roll news, and available supplies consequently are small, explaining the firm position of prices.

There has been a little softening of prices on some lines of book paper. This has been due, it would appear, not to any decrease in the demand, but to the fact that certain mills, which depend largely on the transient trade for their business, have been wanting orders and have lowered quotations slightly to wean away business from competitors. Machine finished book paper is reported available at around 6.75 cents a pound f.o.b. New York, with some inferior qualities offered by manufacturers down to 6 cents. Most book mills are well provided with contract business and are not obliged to accept additional orders at the lower prices since they are already finding an outlet for their production.

Coated book papers are steady. Quotations range from 8 to 11 cents per pound f.o.b. New York, depending on the grade of paper, and it is reported that coaters are kept fairly busy, having a good volume of business on file.

The wrapping paper situation is far from favorable, from the domestic manufacturer's point of view. Imports of kraft wrapping from Europe are arriving in just as large tonnage as at any time during the past year; if anything, larger quantities have come in recently than at any other period. Importers and jobbers are filling their orders from department stores and other retail merchants almost exclusively with foreign paper, and the domestic producer is very nearly shut out of the running. It is a matter of price, pure and simple. The Swedish and German paper manufacturers are shipping wrapping to the States to be distributed to consumers at cheaper prices than are quoted by American mills notwithstanding the original tariff on wrapping paper and the extra duty recently imposed by the Government in an effort to protect the home industry. Were it not for converters it is problematical what would happen to the domestic kraft paper mills. Manufacturers of kraft in the States, it is understood, are managing to keep occupied on orders from paper converters but otherwise they are securing little business. One of the leading kraft manufacturers is reported to have reduced his price to 6.50 cents a pound New York on No. 1 domestic kraft; the foremost producer, however, is said to be still quoting 7 to 7.25 cents.

There is little doing in manila papers and quotations are around a basis of 5.75 cents a pound on No. 1 manila. Rope papers also are in slow demand.

Tissues are moving in small quantities chiefly though quotations show no changes of note. No. 1 white tissue is quoted in New York at 85 to 90 cents per ream, and jobbers here are reported to be fairly well stocked and to be placing few orders of consequence with mills.

There is a fairly steady tone to box board quotations. Plain chip and news board are quoted by eastern mills at $57.50 a ton f.o.b. New York, with some manufacturers asking a differential of $2.50 or $60 a ton on news board. One reason for the steadiness in boards in the face of the light demand recently is said to be that a majority of mills have been closed for inventory and repairs, and another is that waste paper is showing signs of advancing in cost so that board producers have been prone to maintain prices of their product.

GROUNDWOOD.—There is not much activity of an important character in mechanical pulp. Current demand is strictly of the hand-to-mouth variety, consumers are coming into the market when in actual need of supplies and are even then seldom ordering other than pulp necessary to cover their direct requirements. The slow demand, coupled with the heavy output, naturally makes for easiness in prices, and it is a question as to just how low buyers could operate. Domestic grinders generally quote about $35 a ton at producing plants for prime spruce groundwood for prompt shipment, bt is apparent that purchases could be made at less, and it is stated that some Canadian sellers are offering groundwood down to $30 f.o.b. grinding mills. If newsprint production keeps up at its present rate, and there seems every reason to believe that it will, and if the usual dry spell develops later this summer, ground wood prices will likely strengthen in the next few weeks; in the meanwhile there is little apparent reason for the market to improve its quotable position.

CHEMICAL PULP. — The strike of workers in the Norwegian pulp and papers mills is over. A settlement was reached early this week, according to cable advices received in the New York trade, and it is understood that mills are to resume operations at once, thus bringing the stoppage of pulp production in that country to an end after a shutdown of about three weeks.

Locally there is a lack of feature in chemical wood pulp. Demand from paper mills is admittedly slow and yet it is asserted that in the aggregate a fair movement of supplies toward consumption is in progress. New York pulp importers have their salesmen out on the road calling on mill customers, and it is understood they are corralling a fair volume of orders, thereby inferring that papermakers are beginning to show renewed interest in pulp. No changes of consequence are reported in quoted prices. The tone is steady and many on the selling side of the trade expect a stiffening of values within the next few weeks.

RAGS. — Roofing rags continue to exhibit a firm price tone and there has been a further strengthening of quotations this week. Mills have paid 1.40 cents per pound for No. 1 roofing stock f.o.b. New York, and 1.25 cents for No. 2 packing, and it is apparently becoming somewhat difficult to buy additional lots at these rates since dealers lay much stress on the trouble they are having in locating rags among packers and are bent on getting higher prices.

Old rags in general display a firm price tone. Whites are wanted in better quantities and in a larger number of directions than they were several weeks ago, and thirds and blues are marked by a better inquiry. Repacked blues of country origin are fetching about 2.75 cents a pound at shipping points, and miscellaneous packing for blotting and fibre paper mills are selling freely at 2 to 2.25 cents a pound at dealers' points. New cuttings are in slow demand though consumers are absorbing supplies here and there when in need of such rags or when finding accumulations available at favorable prices. No. 1 white shirt cuttings are quoted by New York dealers at 12.50 cents a pound or higher f.o.b. this city, unbleached muslins at 11.50 cents, blue overall cuttings at 8 cents, light silesias at 8 cents, fancy shirt cuttings at 6 cents and washables at 4.75 to 5 cents.

PAPER STOCK. —Prices of old papers are holding decidedly steady. There has been little actual change in market levels this week but the tendency in most instances is higher, and sellers are unmistakably stronger in their demands for the prices asked. Shavings are selling at from 4 cents a pound upwards f.o.b. New York for No. 1 hard white, with a majority of dealers wanting 4.25 cents for extra packing, and at about 3.10 cents as an average for No. 1 soft white shavings. Flat stock is gradually stiffening in price. Dealers mostly want at least 2.65 cents a pound New York for heavy No. 1 magazines, and it is noticeable that they refuse to take orders involving large lots at this price basis. Folded newspapers are selling at around 85 cents a hundred pounds f.ob. New York, and No. 1 mixed paper at 75 cents, and both these grades tend higher. Old kraft paper is firm at 2 cents a pound or more New York and is offered in sparse amounts.

OLD ROPE AND STRINGS. — Old rope prices have eased off a bit more. Sales of domestic manila rope in No. 1 condition to paper mills at 5.50 cents a pound f.o.b. New York have been reported, and it is stated that rope is freely available at a quarter of a cent per pound higher. Sisal strings are firm and in demand, with sellers asking 2.25 cents and more. Mixed strings, on the other hand, are quieter and are offered at about a cent per pound New York. Old bagging is little wanted by paper mills and the business going through is mostly at a price level of around 1.15 cents per

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Helsingfors, Finland

AND

Finnish Wood Pulp Union
Helsingfors, Finland

pound at dealers' shipping points for No. 1 scrap burlap and 80 cents a hundred pounds for roofing bagging.

THE BIRTH OF AN INDUSTRY

Seventeen years ago, the idea of using paperboard for the manufacture of packing cases was conceived. The originator of the idea which has had such far-reaching effects, was, it is claimed, Mr. James J. Hinde, while President of the Hinde & Dauch Paper Company, of America.

To packers nowadays, the idea of despatching their commodities by rail and sea, in fibreboard packing cases, is no novel one. The advantages, from every point of view, of such containers over the old wooden variety are too well known to need recapitulating, but it is easy to understand with what incredulity the suggestion must have been received in those days. Pack goods which have to endure the roughest handling in transit—in *paper?* Ridiculous! It is well that the inventor of the innovation had faith in his idea, and was able to demonstrate the commercial practicability of the proposition.

Lamp chimneys, chosen, presumably, on account of their fragility, were selected as the first articles for shipment in boxboard containers. A long series of carefully conducted trials proved, beyond doubt, that the paperboard container, while not yet perfect, had more than justified its use. It remained to convince the public in general and packers of merchandise, in particular, that such was the case.

The principal medium of publicity employed was the trade fair, notably the World's Fairs at St. Louis and Jamestown, the New England food fair at Boston, and the annual Electric Shows held at Chicago. This publicity was supported by a vigorous general advertising campaign, the result of which was to make the popularity of the paperboard container increase to an amazing extent.

Not the least advantage of the use of fibreboard packing cases, although one rarely taken into consideration, is the consequent conservation of the world's timber supply, which was rapidly being exhausted owing to the ever increasing demands made upon it for supplying strong containers for the shipment of goods. Moreover, rapid as has been the development of the fibreboard packing case, there yet remain further fields of development. It has been estimated that 17 per cent. of America's timber production is still utilised for the manufacture of wooden packing cases. Scandinavia, too still reserves large quantities of its timber resources, which might be better employed, for the manufacture of packing cases which are more costly, and less efficient than the modern fibreboard container. The fibreboard industry is yet obviously in its early stages.—The Paper Container.

SOMETHING NEW YET SOMETHING VERY OLD

Canadian Link-Belt Company Limited, have changed their name to Link-Belt Limited, explaining that the old name was too long and full of repetition.

Link-Belt Limited are well-known as manufacturers of original Ewart link-belts, socket wheels, conveying and elvating machinery, locomotive trains, electric hoists, etc. Their Toronto address is Wellington and Peter streets, and at Montreal they are located at 10 Gauvin Lane.

Wood Pulp Trading Co., Ltd.

501 FIFTH AVENUE,

NEW YORK CITY

WOOD PULP AGENTS

Pulp and Paper Magazine
OF CANADA

A Weekly Magazine Devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades

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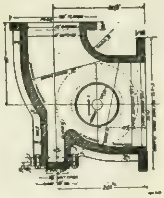

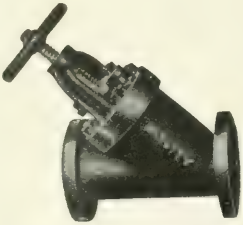

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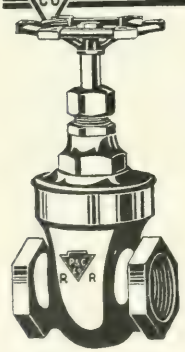

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:-: EDITORIAL :-:

WHAT WILL THE VISITING FORESTERS SEE?

On the occasion of the Imperial Forestry Conference which is taking place in Canada this month and next, and with regard to which mention was made editorially last week, it will be interesting to imagine ourselves going over the ground with the visitors as they traverse Canada from East to West. In 1920 when the first Imperial Forestry Conference was held in Great Britain, the delegates saw the old forests of England and what remains of the old forests of Scotland, together with some replanted areas that demonstrate the value and feasibility of reforestation. What will they see in Canada?

The conference is being held this year in Canada, and the principal topic is the world's softwood supply. Canada is undoubtedly the land of the greatest potential resources of softwood in the British Empire, and by virtue of that position, the Dominion has a very heavy responsibility. It is the duty of Canada to see that this valuable heritage is maintained in a productive condition so that the Empire may always have sufficient supply of this most important material for structural purposes, as well as for the manufacture of many articles of commerce, especially paper. No doubt visitors from overseas, not only from England, but from other parts of the Empire as well, who have never seen Canada will expect to see heavily wooded shores along our magnificent rivers and dense green forests traversed here and there by our wonderful railway systems. We fear that their first impression of Canada as a forest country will suffer and they may get the impression that Canada has practically no wood at all. This impression, of course, will be largely incorrect, and will be created to a considerable extent by the vast distances over which the visitors will travel.

Canada does have enormous areas of forest land, and taken in the aggregate, there is a great deal of timber upon it, but it must be confessed to our shame that a great deal of this land is not *producing* timber. It has grown a wonderful virgin crop and some of it has grown a very satisfactory second crop of trees, but much of the reproduction on land which has been logged over once or a second time has been burned when the new growth has attained an age of one or two up to as much as twenty years. When our visitors consider the condition apart from the extent of our forest land, it is probable that they will wonder where the softwood timber is coming from in the near future.

When the delegates meet in Ottawa for the discussion of the various items on their program, consideration will certainly have to be given to the present condition of Canada's forests and the future supplies of softwood for imperial consumption. Canada is certainly to be congratulated in having, as guests at this critical time in her forest history, a group of men who know conditions in all parts of the Empire and who are qualified to advise our Governments and forest using industries as to the present situation and the probable developments for the future.

There is no doubt about it, the Dominion of Canada should be the store house of softwood for the Empire, and should be the provider of other species as well. This possible and desirable condition of affairs will not be brought about except by a definite policy of practical productive forestry, on the part of all those concerned. It would be most appropriate to take the initial steps under such auspicious circumstances as prevail this summer in Canada.

IS AN ARTIFICIAL SILK INDUSTRY POSSIBLE IN CANADA?

In some quarters there is an idea that the new tariff on artificial silk will promote the establishment of an artificial silk industry in Canada. There are plenty of men associated with the textile industry, however, who deride the notion altogether, and say that artificial silk production in this country is an economic impossibility.

For our part, we confess that, while we have an open mind on the question, we are by no means convinced that the establishment of an artificial silk industry in Canada is so manifestly an economic impossibility. Some of those who avow that it is assert that to start any sort of plant at all would require a capitalization of at least $5,000,000. But would it? There are many small companies in the United States which have either actually started operations or are planning to enter the industry. One such, the Pacific Cellulose Company, Inc., has started operations in its new plant at Walnut Creek, California. This company is capitalized at only $250,000 and reckons on employing only some eighty hands. If it should turn out that companies with a capitalization of this order can successfully produce artificial silk in the United States, why not in Canada? We shall shortly learn whether small companies in the United States can make a success of artificial silk production. If they can, then surely Canadians will not be found behindhand in profiting by their example.

It looks to us as though there has possibly been too much dogmatizing on this matter. The dogmatists have been proclaiming that artificial silk production in Canada would be possible only to companies able to build plants costing millions and that then, since our own market is, of course, of trifling magnitude, it would be necessary to export most of the product, while, since the United States believes in high tariffs in defence of its own industry, it would be only possible to offer our product in Europe in competition with silks manufactured under conditions of much lower wages and depreciated currencies. Most people have accepted this statement as correct.

The next few months ought to show pretty plainly whether or not some of the many small companies either actually started or planning to enter the industry in the United States will succeed.

The calendar year, 1922. saw Canada's imports of artificial silk yarns and thread touch 2,013,429 dollars. We are far from convinced that there is not an opportunity here for Canadian enterprise. —A. R. R. J.

THE FOREST FIRES

The newspapers are full of the subject of forest fires these days. At last the public seem to have become conscious of the fact that more millions worth of valuable timber and pulpwood are destroyed each year than would serve to balance the national budget, with plenty over for contingencies. Various means have been adopted to reduce the number of fires, but still the fires are numberless. The blame for the vast majority of these fires is now being placed where it belongs — at the door of the settler who must burn his slash in order to clear the land, and of the lumberman whose operations leave a cut-over area in such a state that a conflagration is almost inevitable. Unlike the steam locomotive, which burns its path through the forest once and for all, these first two agents of destruction and of civilization advance continuously into the forest areas. Until there is some radical change in the administration of our wooded public lands, individual carelessness is bound to result in wholesale disaster. The present attempts at reform are mere palliatives. Until policies are adopted that make each settler, lumberman, prospector or fisherman entering the woods personally responsible for the prevention of fires, we shall continue to suffer this appalling loss.

OUR MOTTO

To put oil on the bearings and sand on the track is to serve efficiently.

We are getting accustomed to congratulating the mills on making new records. This time it is the Abitibi Power and Paper Co.; the average for June was 471.9 tons per day, for the last week of the month was 477.6 tons, and on June 29th over 497 tons were made in 24 hours. On this day also the four-to-twelve shift broke the individual ton record, when they produced 173.36 tons, while the number of breaks, 34 for the entire mill, is the plant record.

STOKES PREPARING FORESTRY EXHIBIT

In the building which the Dominion Government is erecting on the grounds of the British Empire Exhibition and which will cover an area of about one hundred thousand square feet, one-half will be occupied by the Dominion Government's own exhibit, which will reveal the variety and extent of Canada's wealth in farm and forest, mine and waterfall, reads a despatch from Ottawa.

Forest products, having an economic importance second only to agriculture, will be given a prominent position in the Canadian building, and the services of a specialist have been secured from the forestry branch of the Department of the Interior to create an exhibit to illustrate Canada's forest resources. This specialist is W. B. Stokes, of the Forest Products Laboratories of Canada, Montreal, who has just returned from British Columbia, where he has been collecting material for this display.

Speaking of conditions in British Columbia, Mr. Stokes states that the province appeared to be more fortunate than eastern provinces this year in the matter of forest fires. Doubtless weather conditions were the cause of this, but some credit must be given to the unrelaxing vigilance and resources of the Dominion and provincial forest services. The industry in the West is in a sound condition and fully occupied, a result which must be ascribed in some degree to the worldwide extent of its overseas market. The scale on which the timber operations are effected and the organization of industry as a whole were doubtless contributory factors in arriving at this satisfactory condition.

Mr. Stokes is now engaging material in Eastern Canada and is enthusiastic concerning the value of the many various hard woods and soft woods which are available. This value can be seen, Mr. Stokes states, by anyone who visits the wood-using factories of Quebec and Ontario. Wood-users are very conservative, and if manufacturers throughout the Empire can be made to realize the fact that there is a Canadian wood for nearly every purpose, and that for some purposes Canadian woods are the best, they will be slow to seek supplies elsewhere. Imperial sentiment would provide, not the motive for buying Canadian woods, but the opportunity for learning more concerning their value. Canadian forest products are the most versatile as well as the most abundant in the Empire, he states.

American Pulpwoods

The Suitability of Various Species of American Woods for Pulp and Paper Production

BY SIDNEY D. WELLS[1]

The Forest Products Laboratory, Madison, Wisconsin, has in the past received frequent requests as to the suitability of various woods for pulp and paper production and it has therefore seemed advisable to prepare for publication some of the available data on this subject. The laboratory has carried on an extended investigation over a period of more than ten years and has collected experimental pulping data on practically all the possible species of American pulp woods. These data, insofar as the chemical pulps are concerned, have mainly been obtained from experimental cooks made at the Forest Products Laboratory, Madison, Wisconsin, in 100-pound semi-commercial digesters and from studies made on the resulting pulps. It has been found, however, that the general cooking conditions, yield, bleach, consumption, etc., as determined by experimental trials for pulp made from any given wood, compared quite favorably with the results obtained in commercial practice. The data for the various mechanical pulps were obtained from the experiments carried on at the ground-wood laboratory, Wausau, Wisconsin, where a commercial-sized grinder equipment was installed by the Forest Products Laboratory in co-operation with the American Paper and Pulp Association.

The yield of pulp from any given wood depends directly upon the specific gravity of the wood or weight per cubic foot and the pulping method employed. By varying the severity of the pulping treatment both yield and bleach consumption are changed. For example, white spruce sulphite pulp prepared for the manufacture of newsprint paper, would show an entirely different yield and bleach consumption from bleached white spruce pulp prepared for use in a white bond paper, It is therefore, evident that the character and use of the pulp will largely decide the severity of the cooking operation. Certain woods, such as western larch, containing a high percentage of galactan, which is water-soluble, will show a decreased yield by either mechanical or chemical pulping.

Pulping data have been given for woods such as red and white oak, white ash and certain other woods not because we consider these species suitable for pulp purposes, but because the information was available. Many wood-using plants produce considerable tonnage of slabs and mill waste of woods not especially suitable for pulp production, and are interested in a possible outlet for this waste. In some cases, at their direct request, pulping trials have been made on woods known to be unsuitable for pulping purposes. Pulping data on trials made at the Laboratory have been included for two foreign woods; viz., Norway spruce and Scotch pine which are quick growing woods of possible interest for planting purposes. The various woods have been listed, giving the official name as recognized by the Forest Service, also the common names in use and the range covering the growth of that particular species. This information has been taken directly from the "Check List of the Forest Trees of the United States," by George B. Sudworth.

In considering the pulping and other data given for the various woods, attention is drawn to the following points:

1. The weights of wood given are for bone-dry material per solid cubic foot. This is obtained by multiplying the specific gravity of the oven-dried wood based on the green volume by 62.3 lbs. (the weight of a cubic foot of water.)

2. The fiber lengths as given are the average of all the available data taken from the Forest Service investigations and from other sources. Many of the measurements given are the results of averages of thousands of determinations; in other cases from only a few determinations.

3. The yield figures represent the yield of bone-dry screened and unbleached pulp per hundred cubic feet of solid bone-dry wood. For the purposes of this article, it has been assumed that the ordinary cord of rossed wood piled 4′ x 4′ x 8′ is equivalent to 100 solid cubic feet of wood. To convert the yields on bone-dry basis to air-dry pulp containing 10 per cent moisture, divide the yield by 0.9.

The yield data are based on results obtained from experimental runs made under very favorable conditions. The pulp logs on arrival at the Laboratory are barked, sawed into convenient size and any wood containing knots and decayed spots is rejected. The chips are carefully sorted and are far more uniform in size and moisture content than can be obtained in commercial practice unless the mills operate under more favorable conditions than ordinarily exist. Further, each cook representing an individual experiment, it is possible to press, shreds, sample and screen the pulp with fewer mechanical losses than is feasible in handling the pulp in commercial practice from the blow pit to the wet machine or to the finished paper.

4. The comparison of the character and uses of the various pulps that may be obtained from the different woods offers certain difficulties. It has, therefore, been decided to consider white spruce as the standard wood for pulping by the sulphite, sulphate and mechanical processes and to compare the pulp that might be obtained from any given wood by this process of pulping with the pulp obtained from white spruce. Aspen wood has likewise been adopted as the standard for reduction by the soda process, and soda pulps from other woods will be compared with it. Sulphate pulps made from deciduous woods bleach with greater ease economy than the corresponding soda pulps.

The bleachability of sulphate pulps has been given since recent work has demonstrated that with proper methods and equipment sulphate pulps from many coniferous woods can be bleached with average amounts of bleaching powder to a very satisfactory white.

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* This is the revision of an article of the same title by Dr. Otto Kress, Sidney D. Wells, and Vance P. Edwardes, published in Paper, July 30, 1919, in which thirty new species have been added and many of those in the original article changed to conform with later experience.

[1] Sidney D. Wells, Engineer in Forest Products, Forest Products Laboratory, U. S. Department of Agriculture, Madison, Wisconsin.

Further, no data are given on the possible soda pulping of the various firs, pines, hemlocks, larch, tamarack and other woods that can be reduced by the sulphate process. The laboratory has made extensive pulping trials on the reduction of these woods by the soda process and it is, of course, recognized that this process can be and is at present employed to a limited extent for reduction of certain of these woods. In general, the soda process can be used for reduction of any wood suitable for the production of sulphate pulp.

No figures have been given for bleach consumption. It has appeared advisable to compare the ease of bleaching for any given pulp with the standard white spruce sulphite and aspen soda pulp.

The data given must, of course, be interpreted with the understanding that the figures and results are based on experimental pulping trials. We believe that it may be of interest if used with this reservation for comparing the character and yields of pulps that may be expected from different woods.

THE SPRUCES

BLACK SPRUCE — *Picea mariana.* Wt. 23 lbs. Fiber 2.6 m.m.

Range — Newfoundland and to Hudson Bay and northwestward to the Mackenzie river; southward in Michigan, Wisconsin, Minnesota, and in the eastern mountains to North Carolina and Tennessee.

Common Names — Black spruce (N.H., Vt., Mass., R.I., N.Y., Pa., W. Va., N.Ca., S.Ca., Wis., Mich., Minn., Ont., Eng.); Double spruce (Me., Vt., Minn.); Blue spruce (Wis); Spruce (Vt.); White spruce (W.Va.); Yew pine (W. Va.); Juniper (N. Ca.); Spruce pine (W. Va., Pa.); He balsam (Del., N. Ca.); Epinette jaune (Quebec); Water spruce (Canada, Me.)

Sulphite Pulp

Yield — 1,050 lbs.

Character — Easily pulped; Easily bleached; Excellent strength and color

Possible uses — —Same as white spruce

Sulphate Pulp

Yield — 1,150 lbs.

Character and uses — Similar to white spruce

Mechanical Pulp

Similar to white spruce

BLUE SPRUCE — *Picea parryana.* Wt. 23 lbs. Fiber 2.8 m.m.

Range — Central Rocky Mountain region—Colorado, Utah and Wyoming.

Common Names — Parry's spruce (Utah); Blue spruce (Colo.); Spruce balsam (Colo., Utah); White spruce (Colo., Utah); Silver spruce (Colo.); Colorado blue spruce (Colo.); Prickly spruce (lit.).

Sulphite Pulp

Yield — 1,050 lbs.

Character — Easily pulped; Easily bleached; Excellent strength and color

Possible uses — Same as white spruce

Sulphate Pulp

Yield — 1,150 lbs.

Character and uses — Same as white spruce

Mechanical Pulp

Similar to white spruce

ENGELMANN SPRUCE — *Picea engelmanni.* Wt. 21 lbs. Fiber

Range — Northern Arizona and through the Rocky Mountain region to British Columbia.

Common Names — Engelmann's spruce (Utah); Balsam (Utah); White spruce (Oreg., Colo., Utah, Idaho); White pine (Idaho); Mountain spruce (Mont.); Arizona spruce (Cal. lit.).

Sulphite Pulp

Yield — 990 lbs.

Character — A little hard to pulp; Excellent strength; Excellent color

Possible uses — Same as white spruce

Sulphate Pulp

Yield — 1,000 lbs.

Character and possible uses — Similar to white spruce.

Mechanical Pulp

Yield — 2,100 lbs.

Character — Strong fiber of good color.

Possible uses — Same as white spruce

NORWAY SPRUCE — *Picea excelsa.*[2] Wt. 30 lbs.

[2]**Range** — From the Urals and Lapland to the Pyrenees and Alps.

[2]**Common Names** — Spruce fir, Common spruce White fir.

Sulphite Pulp

Yield — 1,350 lbs.

Character — Slightly more difficult to reduce than white spruce; Good strength and color

Possible uses — Same as white spruce

Sulphate Pulp

Yield — 1,200 lbs.

Character — Easily pulped; Good strength

Possible uses — Same as white spruce

Mechanical Pulp

Probably the same as the other spruces

RED SPRUCE — *Picea rubens.* Wt. 24 lbs. Fiber 3.7 m.m.

Range — Nova Scotia to North Carolina and Tennessee. Range imperfectly known.

Common Names — Red spruce; Yellow spruce (N.Y.); North American red spruce (foreign lit).

Sulphite Pulp

Yield — 1,080 lbs.

Character — Easily pulped; Good strength; Easily bleached; Excellent color

Possible uses — Same as white spruce

Sulphate Pulp

Yield — — — 1,150 lbs.

Character — High-grade strong fiber

Possible uses — Same as white spruce

Mechanical Pulp

Yield — 2,400 lbs.

Character — Excellent strength and color

Possible uses — Similar to white spruce

SITKA SPRUCE — *Picea sitchensis.* Wt. 24 lbs. Fiber 3.5 m.m.

Range — Coast region (extending inland about fifty miles from Alaska to northern California (Mendocine County).

Common Names — —Tideland spruce (Cal., Ore., Wash.); Menzies' spruce; Western spruce; Great Tideland spruce (Cal. lit.).

Sulphite Pulp

Yield — 1,080 lbs.

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[2] From English data.

Character — Easily pulped; Easily bleached; Excellent strength and color
Possible uses — Same as white spruce

Sulphate Pulp
Yield — 1,150 lbs.
Character and uses — Similar to white spruce

Mechanical Pulp
Yield — 2,040 lbs.
Character — Slightly grayish color
Possible uses — Similar to white spruce

WHITE SPRUCE — *Picea canadensis*. Wt. 24 lbs. Fiber 2.8 m.m.

Range — Newfoundland to Hudson Bay and northwestward to Alaska; southward to northern New York, Michigan, Wisconsin, Minnesota, South Dakota, Montana, and British Columbia.

Common Names — White spruce (Vt., N.H., Mass., N.Y., Wis., Mich., Minn., Ont.); Single spruce (Me., Vt., Minn.); Bog spruce (New Eng.); Skunk spruce (Wis., Me., New Eng., Ont.); Cat spruce (Me., New Eng.); Spruce (Vt.); Pine (Hudson Bay); Double spruce (Vt.).

Sulphite Pulp
Yield — 1,030 lbs.
Character — Easily pulped; Easily bleached; Excellent strength and color
Possible uses — White spruce is considered the standard sulphite pulpwood and is used for news, wrapping, book, high-grade printings, etc.

Sulphate Pulp
Yield — 1,150 lbs.
Character — Very strong fine fiber.
Possible uses — Highest grade of kraft paper and strong fiber board.

Mechanical Pulp
Yield — 2,400 lbs.
Character — Excellent strength and color
Possible uses — For practically every purpose where groundwood pulp is required.

THE PINES

LIMBER PINE — *Pinus flexilis*. Wt. 23 lbs. Fiber

Range — Rocky Mountain region from Montana to western Texas (Guadalupe and Limpia mountains) and New Mexico; in mountains of northern Arizona, Utah, Nevada and California (Inyo Mountains and Mount Sillman).

Common Names — White pine (Cal., Nev., Utah, Colo., N. Mex.); Pine (Utah, Mont.); Bull pine (Colo.); Rocky Mountain white pine (Cal.); Rocky Mountain pine; Limbed-twig pine (Cal. lit.); Western white pine (Cal. lit.) Arizona flexilis pine.

Sulphite Pulp
Yield — 1,000 lbs.
Character — Difficult to pulp and bleach; Fair strength but shivey and poor color.
Possible uses — Few

Sulphate Pulp
Yield — 1,040 lbs.
Character —Good strength and color; Fairly easily bleached
Possible uses — Similar to white spruce

Mechanical Pulp
Probably the same as white pine

PINON PINE — *Pinus edulis*. Wt. 31 lbs. Fiber 2.0 m.m.

Range — From Colorado (eastern base Pikes Peak) through New Mexico and to western Texas (mountains)

Common Names — Pinon (Tex., Colo.); Nut pine (Tex., Colo.); Pinon pine (Colo.); New Mexican pinon (lit.)

Sulphite Pulp
Yield 1,330 lbs.
Character — Easily pulped; Difficult to bleach.

Sulphate Pulp
Fair strength, somewhat shivey, and fair color.
Yield 1,300 lbs.
Character and uses — Similar to white spruce

Mechanical Pulp
Probably the same as white pine

SUGAR PINE — *Pinus lambertiana*. Wt. 23 lbs. Fiber 4.1 m.m.

Range — Coast region from Oregon (head of McKenzie and Rogue rivers) to California (Sierra Nevada Mountains and coast ranges to Santa Lucia Mountains; San Bernardino and Cuyamaca mountains.)

Common Names — Sugar pine (Cal., Oreg.); Big Pine; Shade pine (Cal.) Great sugar pine; Little sugar pine; Gigantic pine (Cal. lit.); Purple-coned sugar pine.

Sulphite Pulp
Yield — 1,010 lbs.
Character — Easily pulped; A little difficult to bleach; Poor strength; Fair color
Possible uses — Dark colored wrappings

Sulphate Pulp
Yield — 1,150 lbs.
Character — Fairly easily bleached
Possible uses — Similar to white spruce

Mechanical Pulp
Probably the same as white pine

WHITE PINE — *Pinus strobus*. Wt. 22 lbs. Fiber 3.8 m.m.

Range — From Newfoundland (White Bay region) and along the northern shores of St. Lawrence Gulf to northern Ontario (near Abitibi and Nipigon lakes) southern Manitoba (near southern end of Lake Winnipeg); southward through Northern and Eastern Minnesota, Northeastern (Mitchell county) and eastern border of Iowa (to Scott county), northern (counties) Illinois, southern shores of Lake Michigan, southern Michigan (North of Allegan, Eaton, and St. Clair counties), northeastern and eastern (border counties) Ohio, Georgia (Tallulah Falls.)

Common Names — White pine (Me., N.H., Vt., Mass., R. I., Conn., N.Y., N.J., Pa., Del., Va., W.Va., N.C., Ga., Ind., Ill., Wis., Mich., Minn., |Ohio, Ont., Nebr); Weymouth pine (Mass., S.C.); Soft pine (Pa.); Northern pine (S.C.); Spruce pine (Tenn.).

Sulphite Pulp
Yield — 1,210 lbs.
Character — Difficult to pulp; Difficult to bleach; Fair strength, but shivey and poor color
Possible uses — Few

Sulphate Pulp
Yield — 1,100 lbs.
Character — Excellent strength and color; Fairly easily bleached
Possible uses — Similar to white spruce

Mechanical Pulp
Yield — 1,890 lbs.
Character — Good strength and color, but pitchy.
Possible uses — Similar to white spruce.

JACK PINE — *Pinus divaricata.* Wt. 24 lbs. Fiber 2.5 m.m.

Range — New Brunswick to New Hampshire and west through Great Lake and Hudson Bay (Southern shores) region to Great Bear Lake, Mackenzie river, and Rocky Mountains; south into northern Maine, northern New York, northern Indiana and Illinois, and central Minnesota.

Common Names — Scrub Pine (Me., Vt., N.Y., Wis., Mich., Minn., Ont.); Gray pine (Vt., Minn., Ont.); Jack pine (Mich., Minn., Canada); Princess pine (Ont.); Black jack pine (Wis.); Black pine (Minn.); Cypress (Quebec to Hudson Bay); Canada Horn-cone pine (Cal. lit.); Chek pine; Sir Joseph Bank's pine (Eng.); "Juniper" (Canada); Banksian pine (lit.)

Sulphite Pulp
Yield 1,080 lbs.
Character — Not easily pulped; Very difficult to bleach; Fair strength; Poor Color; Pulp shivey and full of pitch.
Possible uses — Mechanical difficulties when running this pulp over the paper machine prevent its use.

Sulphate Pulp
Yield 1,150 lbs.
Character — Very strong tough fiber; Fairly easily bleached
Possible uses — Similar to white spruce

Mechanical Pulp
Yield 2,130 lbs.
Character — Gray, somewhat soft, good strength, pitchy, poor finish.
Possible uses — Medium grades of groundwood.

LOBLOLLY PINE — *Pinus taeda.* Wt. 30 lbs. Fiber 3.0 m.m.

Range — South Atlantic and Gulf States from New Jersey (Cape May), southern Delaware and West Virginia (Wood, Mineral, Hampshire, and Hardy counties) to central Florida (Cape Malabar and Tampa Bay) and west to eastern exas (Colorado River; in Bastrop County); northward into southeastern Indian Territory, Oklahoma, Arkansas, and southern border of middle and west Tennessee.

Common Name — Loblolly pine (Del., Va., N.C., S.C., Ga., Ala., Fla., Miss., La., Tex., Ark.,); Oldfied pine (Del., Va., N.C., S.C., Ga., Ala., Fla., Miss., La., Tex., Ark.); Torch pine (Eng. lit.); Rosemary pine (Va., N.C., in part); Slash pine (Va., N.C., in part); Longschat pine (Del.); Longshucks (Md., Va); Black slash pine (S.C.); Frankincense pine (lit); Shortleaf pine (Va., N.C., S.C., La.); Bull pine (Texas and Gulf region); Virginia pine; Sap pine (Va., N.C.); Meadow pine (Fla.); Cornstalk pine (Va., Md.,); Black pine (Va., Foxtail pine (Va., Md.,); Indian pine (Va., N.C.); Spruce pine Va., in part); Bastard pine (Va., N.C.); Yellow pine (north Ala., N.C.); Swamp pine (Va., N.C.); Longstraw pine (Va., N.C., in part.)

Sulphite Pulp
Yield — 1,140 lbs.
Character — —Easily pulped; Difficult to bleach; Good strength and color
Possible uses — As a substitute for white spruce

Sulphate Pulp
Yield — 1,420 lbs.
Character — Fairly easily bleached; Strong but coarse fiber
Possible uses — Similar to white spruce

Mechanical Pulp
Yield — 2,450 lbs.
Character — Short fiber and very pitchy
Possible uses — Only when mixed with better grades of groundwood fibers.

LODGEPOLE PINE — *Pinus murrayana.* Wt. 24 lbs. Fibre 2.3 m.m.

Range — From Alaska (Yukon river) and southward through interior British Columbia; the mountains of Washington and Oregon to California (Sierra Nevada Mountains to San Jacinto Mountains); plateau east of the Rocky Mountains (latitude 56) and south through the Rocky Mountain region to New Mexico and Northern Arizona. Also Coast region from Alaska to California (Mendocino county).

Common Names — Tamarack (Wyo., Utah, Mont., Cal.); Prickly pine (Utah); White pine (Mont.); Black pine (Wyo.); Lodgepole pine (Wyo., Mont., Idaho); Spruce pine (Colo., Idaho, Mont.); Tamarack pine (Cal.); Murray pine (Cal. lit.); Scrub pine; Knotty pine; Sand pine; (Oreg.); Bolander's pine; Henderson's pine; North Coast Scrub pine Cal. lit.).

Sulphite .Pulp
Yield — 1,080 lbs.
Character — Easily pulped; A little hard to bleach; Excellent strength and color
Possible uses — As a substitute for white spruce

Sulphate Pulp
Yield — 1,120 lbs.
Character and uses — Same as white spruce

Mechanical Pulp
Yield — 2,140 lbs.
Character and uses — A little pitchy, but otherwise similar to white spruce.

NOTE — The lodgepole pine which grows in the lowlands in the coastal region is very similar to jack pine. The Rocky Mountain region lodgepole pine, however, contains much less pitch and is to be preferred for sulphite and mechanical pulps.

(To be continued)

PAPER AND PAPER PRODUCTS VALUES IN 1921

The census bureau reports for 1921 show the value of the product of the paper and pulp mills of the United States totaled $667,435,847, and the manufacturers of paper totaled $385,747,017. Of the latter figure, $215,000,000 represents the value of paper boxes and paper bags not made in paper mills. The paper industry even in this year of depression therefore, produced $1,000,000,000 worth of materials. The printing and publishing industry added over two billion dollars to the total, making with related industries a total product of the paper and printing industry valued at $3,162,731,414.

THE MODERN PAPER PLATER DRIVE

By A. F. PAIGE Sales Engineer Westinghouse Elec. and Mfg. Company, Springfield, Mass.

Paper platers are used to produce linen or other special surfacings to sheet papers. The sheets are stacked in a book between sheets of zinc, linen, cardboard, etc., depending upon the surface desired. The complete book is placed between thin metal covers. The finish is applied to the paper by the pressure of the rolls when passing the book back and forth between them. This is usually effected by reversing the direction of rotation of the plater rolls.

The modern paper mill uses individual electric drives liberally and obtains thereby greater production per machine at less labor, power and space cost. The individual electric motor drive eliminates expensive belting, countershafts with their disagreeable oily bearings, etc., and permits more effective lighting, thereby improving health and morale of operators and reducing wastage.

The more common types of plater drives are the belt drive and the individual motor drive. Both of these drives are usually reversing. The motor used with the belt driven plater requires no special consideration. The constant reversals, however, are unusually severe on the belts, causing them to be short lived. Further, the belt slippage upon reversal is considerable and involves the absorption of quite a bit of energy and the loss of time. One example of the belt driven plater is shown in Fig. 1.

To eliminate belts, countershafts, oil bearings, etc., of the belt driven plater, there was devised the individually motor driven plater, as shown in Fig. 2. This drive is simple, rugged and compact. The phase wound reserving motor has high torque characteristics. It is mounted on a bedplate common to the plater and coupled to the plater pinion shaft. The external rotor resistance assists in keeping the motor cooled by dissipating outside of the motor much of the heat of the reversal. The control consists of three units, viz., a three position master switch, a cabinet enclosed contactor panel, and an oil circuit breaker primary switch. The small drum controller, or master switch, with one forward, one reverse and one off position is mounted on the end of the plater table with a short piece of flexible conduit attached to allow the table to be raised or lowered. The length of travel of the switch handle is very short, and, therefore, does not tire the operator's wrist. This master switch controls the two magnetically operated contactors of the contactor panel. The contactors are mechanically interlocked, one furnishing power to drive the plater forward, the other to drive the plater in the reverse direction. Consequently, the control is extremely simple.

The oil circuit breaker is used to disconnect the con-

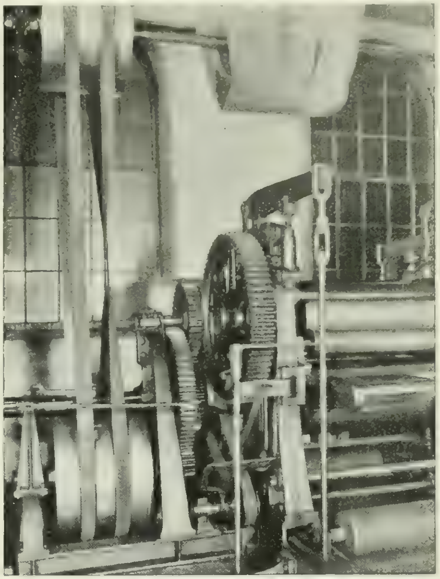

Fig. 1.

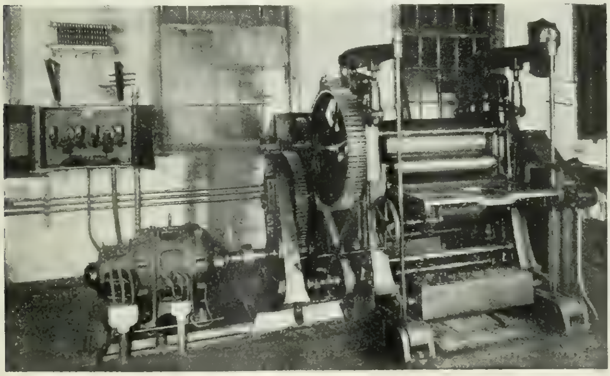

Fig. 2.

trol circuit from the power source and functions to protect the equipment from extreme overloads.

As the duty of the reversing plater drive is rather heavy, the equipment is made rugged to withstand this type of service. Ordinarily, the plater will be reversed from 10 to 20 times a minute, but when starting to plate a thick book that is full of air, the reversals may reach a frequency of 30 to the minute.

The paper mill in which the Norwood Engineering Company equipment of Fig. 2, is installed, increased its production on this plater by 20 per cent, after replacing the belt drive by the reversing motor drive. The shorter time of reversal and the increased speed of the rolls made possible by direct motor drive permitted this increased production. This 36″ plater having 17″ diameter rolls and operated at 20 r.p.m. plates 72 books of very high grade bond in 2½ hours at an energy expenditure of 10.8 KW. hours. The books consisted of 125 sheets each, 28″ by 34″ of 41 paper.

JAPAN'S PAPER PRODUCTION INCREASED IN MAY

Twelve leading paper mills, members of the Japan Paper Association, produced during the month of May 64,800,000 lbs. and sold 64,180,000 lbs. This is an increase of 907,000 lbs. in production and 2,924,000 lbs. in sales compared with those of the preceding month.

Compared further with those of the same month of last year, it is an increase of 10,830,000 lbs. in production and 7,632,000 lbs. in sales.

To be more accurate the following table will show the details of the above figures.

	Produced lbs.	Sold lbs.
High grade printing paper . .	10,184,000	9,384,000
Printing	10,679,000	10,437,000
News	28,060,000	29,782,000
Japan simile	4,168,000	3,423,000
Machine made Japanese paper	1,276,000	1,439,000
Match	812,000	760,000
Colored	1,083,000	1,000,000
Wrapping	2,957,000	2,728,000
Chinese	574,000	338,000
Miscellaneous	5,003,000	4,899,000
Totals	64,800,000	64,193,000
Grand Totals Jan.-May	305,076,000	315,838,000

NEWSPRINT OUTPUT INCREASED 15 P.C.

Newsprint production, United States and Canada, for the first five months of 1923, was 15 per cent. more than for the first five months of 1922 and 34 per cent. more than for the same period in 1921, according to a statistical review compiled by R. S. Kellogg, secretary of the Newsprint Service Bureau, New York.

Imports of newsprint into the United States for the first three months of 1923 were 27 per cent. more than in the first three months of 1922 and 59 per cent. more than in the same period of 1921.

Exports of newsprint from the United States for the first four months of 1923 were 40 per cent. less than in the first four months of 1922 and 23 per cent. less than in the same period of 1921.

Mill stocks of newsprint at United States and Canadian points were 4 per cent. more on May 31, 1923, than on May 31, 1922, and 34 per cent. less than on May 31, 1921.

PULP AND PAPER MARKET IN BRAZIL

The market for paper and pulp is a very difficult one from the point of view of Canadian export, writes Canadian Trade Commissioner E. L. McColl, from Rio de Janeiro, under date of June 22 in the Commercial Intelligence Journal. The United States is finding great difficulty in obtaining a share of the business in competition with Germany, Austria, Holland, Norway, Sweden, and Finland. During the nine months ending March, 1923, the United States shipped to Brazil newsprint to the value of $155,000, and book paper, not quoted, to the value of $132,000. Other papers exported are estimated to value roughly $73,000, or a total for the nine months of $360,000, or $480,000 per year. Brazil imported paper of all kinds in 1922 to a value of $2,250,000.

One of the handicaps under which Canadian exporters suffer is in the matter of freight rates, which are three times as great from New York to Rio de Janeiro as they are from Christiania, Rotterdam, or Hamburg. Freight rates from New York run from $11 to $21 per ton, according to the class of paper. Newsprint stands about midway at $16 per ton of 2,240 pounds. Newsprint from the above-mentioned European ports is 25s or about $5.80 per metric ton. When also the fact is considered that European prices are on the whole 10 per cent. les than those from North America, the difficulty of obtaining a strong foothold in Brazil may be fully realized.

The newsprint market is controlled by Finland, Norway, and Sweden. A contract just made for newsprint from Finland specifies that 200 tons should be delivered by August 15 and thereafter 100 tons per month until 1,300 tons had been received. The price is equivalent to $76 per ton f.o.b. Helsingfors (United States manufacturers quote a factory price of approximately $80.50 per ton.

The supply of super-calendered hardsized printing, second grade or imitation bonds, general magazine and job printing paper, are imported from Holland, Germany, and Austria. Dutch hardsized printing in sheets of 25 by 38 inches and in weights from 50 to 75 grams per square metre is quoted at the equivalent of $138 f.o.b. Amsterdam, whereas United States f.o.b. prices for an equivalent paper are about $154 per ton. High-class papers cannot be sold here in quantity, as the consumers will not pay the price; good German papers of medium-quality finish at considerable lower cost are finding a ready sale and second-grade wrapping papers are made locally and so protected by duties that the foreign article cannot be imported. High-grade kraft papers are the exception as the people will not pay for them. The consumption of miscellaneous papers, including bristols or cardboards, blotting, cover, or coated papers, is not considerable, buyers purchasing from one to three years' supply at a time. Quotations recently received on easy bleaching sulphite pulp were the equivalent of $79.87 per ton f.o.b. European port.

Samples of papers made in Brazil and the names of the Brazilian importers may be obtained on application to the Department of Trade and Commerce, Ottawa.

What of society which rejects Jesus and embraces Jazz?

FIBRE, ITS QUALITIES AND USE

By HAROLD E. SALTON.

After cotton materials have served their purpose in clothing mankind they are no longer thrown on the scrap pile; their usefulness is not ended, modern chemistry has made possible the reclaiming of old waste, turning it into a variety of useful articles. In "Raw Material" we read the story of hard fibre—old cotton rags rescued from the scrap pile, washed and cleaned and converted into a new material several times stronger than leather, tougher than some metals, yet lighter than aluminum. Its unusual toughness is especially noteworthy. No ordinary force can cause it to dent, crack, split, break or splinter. It actually improves with age, is impervious to oil or grease, is unaffected by all ordinary organic solvents and will not crystallize under severe vibration.

The basic raw materials from which fibre is made by all the vulcanized fibre manufacturers is cotton-cloth rags, while that of the horn-fibre manufacturers is jute cord and burlap rags.

If fibre were limited to any one set of physical qualities it is obvious that its application would be similarly limited to one or two industries, but as a matter of fact, sixty years of industrial tests have shown that fibre is an unusual material in almost the same sense as that term is applied to steel. "Raw Material" has collected a list of over 300 structural and mechanical purposes for which fibre is used today in scores of manufacturing industries. These range all the way from flexible washers and gaskets to hard, dense gear wheels; and from automobile parts and accessories of many kinds to the innumerable forms of usefulness fibre assumes in the electrical manufacturing industry.

The most basic distinction between grades of fibre consists in the determination of the kind of rags from which they are made. Cotton, linen, hemp and jute rags together with wood pulp are all converted into material called fibre.

Only the higher grades of rags, such as cotton and linen are made into vulcanized fibre, the jute and hemp being largely made into soft fibre boards. But as some of the poorer grades of cotton rags are also worked into soft fibre boards another distinction can be made in this classification of fibres by dividing them into two classes, viz:

(1) Vulcanized and
(2) Unvulcanized.

(1) All the vulcanized varieties receive a chemical treatment which more or less gelatinizes the individual fibres after which mechanical treatment of the mass solidifies it into a homogeneous whole.

(2) The unvulcanized varieties are not gelatinized by a chemical treatment but depend upon prolonged mechanical treating for perfect disintegration into a pulpy mass, which is readily formed by the mechanical treatment into the finished fibre sheets. Such fibres are most frequently made from hemp and jute rags and approximate the color of horn in their finished condition, consequently the name horn-fibre is frequently given to this grade of fibre products.

It is almost safe to say that no other material enjoys such a combination of qualities as fibre. It possesses the properties of many non-metallics and has many characteristics of the metals. It has the strength, lightness, toughness, resiliency, non-crystallizing and non-conducting power of wood, only in a superior degree, while it is non-cracking, non-splintering and possesses resistance to heat, to many solvents and to the deteriorating influences of time which qualities characterize many metals.

Fibre can be fabricated by similar quantity production methods and by almost identical tools used in working other materials, and hence its combination of qualities requires no extensive changes on the part of the manufacturer adopting it. Fibre is fabricated with little more difficulty than wood and leather, it dulls the tools faster, but in this respect can hardly be compared with the metals.

It may be said that for the most of the purposes for which it is employed fibre really has no competitors because of their lack of similar properties. But in some few cases in which fibre comes into active competition with wood, comparison of the working life of the two materials promptly settles the question of relative economy.

Aside from the strength and resistance of fibre to stress

"Silent Waterproof Gear"

and to electrical tension, it should be remembered that it is non-absorptive of oil, gasoline, benzine, alcohol, acetone, etc. but is slowly corroded by many acids.

Dry heat does not soften fibre and it will not melt under any conditions. With increasing temperature it becomes more and more brittle but retains its strength and insulating properties until it chars at about 350 deg. F. When subjected to steam and atmospheric pressure, however, fibre softens and may be bent or otherwise shaped into any form whose retention is desired after drying.

While fairly good water-proof qualities can be imparted to ordinary grades of fibre used in places exposed to open atmosphere, by covering with shellac or impregnating with paraffin, such methods do not entirely eliminate working difficulties.

After ten years of exhaustive laboratory experiments success was finally achieved in producing two thoroughly water-proof fibres. These two grades of fibre as produced to-day possess fabricating properties similar to those of ordinary fibre grades.

Quantity production of machined parts by the consumer of fibre is vastly facilitated by the primal forms in which it is sold by the manufacturer viz: sheets, tubes and rods. A natural outgrowth of the business of manufacturing these forms was the auxiliary industry of fabricating the raw materials into finished parts.

It is a notable fact that most large fibre consumers of to-day began their purchases in an experimental way and for one or two purposes, but in the natural course of events found more and more purposes for which the material could be utilized with great manufacturing advantage and economy.

The writer wishes to call attention to the rapidly growing use of fibre in the textile industry. Some of the many ways in which fibre is replacing other materials is well illustrated by listing some of its many uses, viz: spool heads, bobbin boxes, loom picks, shuttles, swift braces, shuttle box liners, thrust washers, lacing combs, gears, picker stick ends, spindle guards, receptacles, roving cans, trucks, boxes, gill cans, warehouse cars, etc.

An example of the advantages resulting from the use of fibre is shown in its use as head for spools and bobbins. Whenever a spool head breaks it means a loss because that yarn is wasted and a pound of silk worth five or six dollars off the bobbin is worth barely a dollar in waste. Then again splintering in the head of a spool or bobbin causes chafing of the yarn and breakage resulting in a loss of time and money. So that from a purely economical standpoint the durable, non-splintering, fibre head, is well worth consideration by mill men. Then again fibre can be finished with a smooth glossy surface and its color being incorporated in the material, there is no danger of its running and injuring the fabrics.

"Roving Cans."

"Swift Braces."

And so, in the opinion of the writer, many industries now using fibre in a limited way are practically certain to become important consumers in the course of time and for some manufacturers who are not consumers at present, fibre is indeed the inevitable material.

The accompanying cuts were kindly supplied to us by the Dominion State Fibre Company, of Canada, Ltd.

WHITE WATER LOSSES

BY W. G. MacNAUGHTON

If I could been present at your meeting I would have talked on white water losses and told you something of what is being done in the industry. As I cannot be in attendance I will present a few thoughts which, if they provide a basis for discussion, may be as productive of value as if I were present.

We know that in all mills there is loss of material, mostly fiber but we know of few mills that can give any accurate estimate of this form of waste either in actual quantity by weight or in percentage of the daily product.

If the shrinkage in conversion is down to 5% or less by the accounting figures usually every one is satisfied even though the sewer discharge is easily seen to contain stock.

Since, in a paper mill, particularly if there are pulp mills in connection and the groundwood and sulphite is slushed, and the best accounting figures are a guess, there should be a check somewhere if it is possible. In some mills, and it may have been your experience, the figures have shown that 100 lb. of paper had been made all during the month from 99 lb. of stock even without allowing for the difference of 3% of moisture between the paper and the calculated weight of the pulp.

I do not want to talk on cost accounting but it is valuable for the superintendent and the accountant to see that the records are based on reason as well as on apparent fact.

Since in many mills from the nature of things it is impossible to get the actual weight of the stock used while it is in process, it is very evidently necessary to have as many checks as possible.

Checks that are wanting in most of the mills are the quantity of water discharged from the mill and the amount of material per 1,000 gallons it contains.

It has been found that of two mills making the same product under the same general conditions of manufacture, one uses, that is discharges, 10,000 gallons of water per ton while the other uses over 25,000 gallons. The fiber in the effluent per 1,000 gallons might be the same yet the second would be losing $2\frac{1}{2}$ times the first.

It is very good to have screen savealls and to give attention to their upkeep but it is becoming recognized that in addition the value of the effluent be measured and tested for the quantity of material it carries.

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*An address to Pulp and Paper Mill Superintendents, Association, May 18-19.

Woodlands Section

ARE YOU JUST GAMBLING?

By O. M. PORTER

Secretary-Treasurer, The Woodlands Section

$1,000,000,000 represents the invested capital of the pulp and paper mills of the United States.

$1,000,000,000 represents the value of the paper produced annually by this investment.

$250,000,000 were paid for pulpwood and wood pulp by the United States pulp and paper industry in 1922; and only an equivalent amount for all the rest of the necessary raw materials rags, waste papers, coal, sulphur, bleach etc.

Eighty-one per cent. of the pulp and paper mills of New England, New York, and the Lake States are entirely dependent on purchase for their supplies of pulpwood.

We import from Canada about 20 per cent. of our annual consumption of pulpwood. Canada's forests are not unlimited. Their conservationists are trying very hard to extend the export embargo to freeholds.

Where is *your* pulpwood coming from five, fifteen or fifty years hence?

The paper industry of the United States could well afford a comprehensive survey of the pulpwood resources of the United States, and a study of the factors tending to increase our domestic production of pulpwood. This would include present methods of fire prevention and suppression in the several pulpwood forest regions; costs and yields from artificial reforestation; and outlines for the practical management of timbered areas, with the view to sustaining their production of pulpwood and saw timber.

Are you gambling with the situation? Do you contemplate complete amortization of your plant and equipment within the next decade or so? Do you expect to move South, North or West? Or have you insured your continuous operation by a sufficient acreage of timberland to supply at least a portion of your actual pulpwood requirements?

The Woodlands Section of the American Paper and Pulp Association advocates:

1. A comprehensive survey of our domestic supplies of the paper industry's basic raw material—pulpwood.
2. A careful study of the probable costs and yields from artificial reforestation.
3. The development of practical plans for forest management to insure continuous production.
4. Sound Federal and State forest legislation .
5. Forest education—for the public, the owner and the operator.

BECKER TO EXAMINE OUR CONDITIONS

London, July 24. — Sir Frederick Becker, who is sailing for Quebec tomorrow, is going West to examine transportation and other conditions, according to a cable to the "Montreal Star".

He is preparing big scale experiments in England for the production of paper from wheat straw, and will also make investigations in Canada concerning this possibility.

EXTRACTS FROM ARTICLE BY GENE STRATTON-PORTER

In McCall's Magazine for April, 1923.

I have lived to see the enormous prices set upon furniture made from walnut, oak, cherry, and bird's-eye maple. While writing this article, I read of a black walnut tree just sold in Indiana, from the stump of which alone, four thousand dollars' worth of fine veneer was to be made, and if the trunk were solid and proved to be as finely marked as was hoped, it would swell the value to unbelievable figures for a tree.

Who can estimate the appalling waste in the burning of those indiscriminate log heaps! I used to marvel at the gorgeous smoke ascending in wreaths and banners of lavender, pink, blue, red, grey from those green logs!

* * *

I have not been accustomed to considering myself among the oldest inhabitants; a fair degree of civilization had reached Indiana when I was born, yet, in my childhood I was accustomed to Indians at the door, to wild turkeys, wild cats and bear and deer in the woods not farther than Michigan from my home. We used to see wild pigeons in such numbers as to break down the branches of the beech, maple and linden trees on which they perched at night.

I was born at a period when, almost daily, huge wagons lumbered down our road, many of them drawn by oxen plodding a few miles each day on the way westward. The plains were covered with buffalo. We used the skins for sleigh robes and they cost from ten to thirty dollars a piece, depending on the size and condition. There was an abundance of game of every kind, the fish fairly crowded the rivers.

One of the commonest sights of my childhood was the ascending smoke in all directions from the burning of uncounted log heaps. And Oh! the pity of it! Those log heaps consisted of as fine trees as God ever made, felled where they stood and rolled together and burned *to get them out of the way*. Oak, hickory, beech, ash, elms, that almost swept the sky, wild cheery, bird's-eye maple, black wallnut—trees that to-day would be sawed into thin sheets and used for the veneering of less expensive wood; trees for which any lumberman would pay from six to twelve and fifteen hundred a trunk, felled and burned in order to clear the ground upon which they stood for the cultivation of corn and potatoes. The resources of the country were considered so vast that it never occured to any one to select the most valuable of these hardwoods, and store them for the use of future generations.

* * *

I have lived to see timber becoming so scarce that houses of stone, brick, and cement are resorted to through necessity rather than choice in many instances. I have lived to see the greater part of our springs dried up, the little streams drained from the face of the earth, and many of the rivers practically dry in the summer season, the lake levels lowered, the fish, game and fur-bearing animals practically exterminated.

* * *

The deer and fur-bearing animals are practically gone from the country I knew and the country further west as well. Many of the Indians are nearly starving through the scarcity of fish and game. The birds have been depleted in numbers until it is quite impossible to raise fruit of any kind without a continuous fight against slug and aphis, a war which birds in sufficient numbers would wage for us.

* * *

With the cutting of our timber has come a change in our climate; weeks of drought in summer and destructive cyclonic windstorms, winters alternating from a condition so open as to freeze prematurely forced fruit and grain, and winters so stringently cold that the fruit trees are killed outright.

The even temperature and the rains every three or four days which we knew in childhood are things of the past. Summer in these days means to scorch for weeks at a stretch with unalleviated heat; and in the same state in which I was born, it has become necessary for the sons of the men who wasted the woods and waters to put in overhead sprinkling systems in order to grow their garden vegetables while windmills and irrigation are becoming common.

In my childhood my father planted grain with the same certainty of having a full crop, that he had of having alternate day and night. To-day the farmer on my land has no more idea whether he will get a paying yield from the wheat, corn and potatoes that he puts into the ground than he has as to whether the next cyclone will blow his house into the lake or pass a few yards on the other side of it. We, as a nation, have already, in the most wanton and reckless waste the world has ever known, changed our climatic conditions and wasted a good part of our splendid heritage. The question now facing us is whether we shall do all that lies in our power to save comfortable living conditions for ourselves and the spots of natural beauty that remain for our children.

If this is to be done, a nation-wide movement must be begun immediately. Our climate could be greatly bettered if every man owning land would do what he can to restore original conditions by fighting to save the water in his vicinity, and by planting all the trees for which he can possibly spare space. *More water means more rain.* A heavier growth of timber breaks up culminative winds and gives bird life, under rigorous protection, a chance to renew itself. Wherever there are plenty of birds the spraying and fighting of insect pests is not necessary.

The above warning applies with even greater force to Canada, for small as the remaining supply of timber in the United States now is, the stand in Canada amounts to less than one third of the supply in that country.—F. J. D. Barnjum.

WHAT IS A "HARDWOOD" TREE?

From time to time there comes up to wood users of all description (that is, to practically everyone) the question as to what constitutes a "hardwood" tree as distinguished from a "softwood" tree. Can we call the poplar a "hardwood" when its wood is so soft? And, conversely, can we speak of hard pine as a "softwood" when its wood is so much harder than that of the poplar?

This is a case where a term, apparently quite definite, has acquired an altered meaning in use. A "hardwood" tree is not necessarily a tree whose wood is hard, nor is every tree whose wood is hard a "hardwood" tree. Poplar, basswood, and tulip, or "whitewood," for instance, are all termed "hardwoods'" although their wood is comparatively soft; and, on the other hand, hard pine and yew belong with the "softwoods," although their wood is much harder than that of the "hardwoods" just mentioned.

The usage prevailing in the forest services both federal and provincial in Canada (and the same may be said of those of the United States) is to apply the term "hardwood" to a tree that bears leaves, such as the maple, oak, and ash, as distinguished from those trees having needle-like foliage, such as the pine and spruce, or scale-like foliage, such as the cedar, which are termed "softwoods".

These latter are often described as "evergreens," though the tamarack, which is a softwood, sheds its foliage in the autumn, and the madrona in British Columbia, which is a hardwood, keeps its foliage all winter. Nor is the term "conifer" or cone-bearing tree, altogether satisfactory; the fruit of the yew (another softwood) has the external appearance of a berry. The botanical terms "Angiosperm" and "Gymnosperm" (as applied to trees), could they be popularized, would clearly define the groups of "hardwoods" and "softwoods" respectively.

In the ten counties in Ontario the work of clearing has been so thoroughly done that only five per cent or less of the area remains under forest. In one case, indeed (that of Peel county) the area has been reduced to three per cent. In thirty counties the area in forest is only ten per cent less. In the continental Europe the proportion is far greater, even in the most densely populated countries. France, for example, has nineteen per cent of her area in forest, and Belgium seventeen per cent.

IDENTIFICATION OF PULP WOODS

Spruce, hemlock, balsam fir, tamarack, and jack pine are the five principal softwoods used for pulp in the Lake States, Northeastern States, and Southeastern Canada. These woods differ considerably in price, quality, and pulping properties; and the wood pulp manufacturer often finds it desirable to examine his wood in the log or bolt form before buying or cooking it to insure himself that the species are not mixed. The following key, prepared by the Forest Products Laboratory of the U. S. Forest Service, Madison, Wisconsin, gives the distinguishing characteristics which are most obvious to the unaided eye.

I. Exudations of resin, pitch pockets, and pitch streaks common in the wood. (This does not refer to the bark.)
    A. Heartwood white and same color as sapwood; odor not pronounced; bark thin and scaly ...SPRUCE.
    B. Heartwood distinctly darker than sapwood.
        1. Sapwood mostly less than 1 inch wide; heartwood russet brown; odor not pronounced; exudations of resin scant; bark light reddish brown, thin scaly, not ridged ....TAMARACK.
        2. Sapwood mostly over 1 inch thick, heartwood reddish brown; odor of wood like pine pitch; exudations of resin usually abundant; bark dark, thick and ridged, especially at butt — JACK PINE.

II. Exudations of resin, pitch pockets, pitch streaks, and pitchy odor absent. Heartwood and sapwood of about the same color.
    A. Heartwood white and same color as sapwood; odor ally ridged and scaly except on very small stems, without resin blisters ......HEMLOCK.
    B. Wood white; bark usually thin, fairly smooth, with resin blisters ....BALSAM FIR.

SEES THE OTHER SIDE, TOO

The Quebec Telegraph has the following comment on the proposed pulpwood embargo

The proposed embargo upon the export of pulpwood is a matter concerning which there is so much to be said both for and against that it calls for the most serious consideration of the Government before arriving at a definite decision. The Telegraph has always stood and still stands, in the interests of our industrial workers, for the manufacture in Canada of the finished product from all our raw material. It is this policy which has built up the great pulp and paper industry of Canada, and the Telegraph has urged an adoption of the same policy in regard to asbestos and other natural products. But there are other things, too, to be taken into consideration in this connection. The question has been raised for instance of privately owned timberlands. One correspondent puts it in the following forcible terms: "Let us suppose that I am the owner in fee-simple of timber lands for which I have paid a good price, for the sole purpose of establishing a business of exporting pulpwood, or of selling in the open market to the highest bidder. I have installed necessary plant and equipment to recover the timber and built a rossing mill to bark and prepare the wood for the pulpmill. Just then the Government steps in and says: "You cannot do it; if you wish to make use of your timber you must sell it to Canadian mills only or erect a paper mill yourself." But I have no money to build a paper mill, and, as most of the Canadian mills have their own leased or owned lands, they will buy my wood only when their own cut runs short, or my price is so cheap that they are getting my wood for less than the cost of making their own. My timber thus becomes worth practically nothing to me, and the Crown, having sold me the title to standing timber and pocketed the money, or taken the equivalent in land exchange, now steps in and prohibits the operation of my property to my own best advantage on the plea that somebody, sometime, may get employment in a paper mill built on the strength of my timber. Meanwhile, along with my employees of the bush and rossing mill, I may look up another job or go to the poorhouse." Then again it has been asked what would become of our textile industry or of our demands for anthracite coal, if the policy suggested for us in the matter of lumber should be applied against us in the matter of these other raw materials by the United States. These are all subjects that demand the most careful consideration on the part of the Government.

FOREST FIRES

The season of forest fire danger is approaching and the forest services, federal and provincial and forest protective associations are making preparations to combat this great destroyer of forest wealth. Everything that modern science has devised will be used in the campaign—patrols, lookout stations, telephones, telegraphs and heliographs, portable pumps, gasolene trucks, power boats, railway speeders, and aeroplanes. These are all valuable aids but the great engine for fighting forest fires is public opinion.

Nearly all forest fires are caused by human carelessness, therefore when public opinion sets itself solidly against this carelessness, and holds it to be a crime against the nation, a large part of the cause of fires will disappear. Patriotic citizens can do a great service for Canada by being scrupulously careful with their own use of fire when in the woods and by helping to build up, whether they live in the city or the country, a body of public opinion about fires which will deter the careless and strengthen the hands of those who protect the forests.

BOOKS FOR FORESTERS

Paper Technology. An elementary manual on the manufacture, physical qualities and chemical constituents of paper and papermaking fibers. By. R. W. SINDALL. Third edition. Completely revised and rewritten. xvi, 337 pp., 144 plates, 202 illus. Med. 8vo. 1920. London: Charles Griffin and Co., Ltd. 21 s. net.

This well known work, which was first published in 1906, and has now reached its third edition, gives a useful, instructive and well-arranged account of the manufacture and properties of pulp and paper of various kinds. The physical and chemical character of the raw materials and the finished paper are described, and methods of analysis, and investigation are carefully and fully detailed. In addition, the book contains a chapter on the history, chronology and statistics of paper making and on the customs of the paper trade in the different countries, and useful glossaries of the technical terms used in connection with the raw materials and those applied to papers of various descriptions. The chief changes introduced in the new edition are to be in the section devoted to the examination and analysis of the finished product. — Bull. Imp. Inst. Apr. - June, 1920.

A Manual of the Timbers of the World, their Characteristics and Uses. By Alexander L. Howard. To which is appended an account by S. FitzGerald of the Artificial Seasoning of Timber. xvi, 446 pp., 8 vo. London: MacMillan and Co., 1920. 30 s. net.

In his preface Howard modestly disclaims any intention of superseding previous works, and he has certainly carried out very completely his expressed purpose of supplementing them. After a brief introduction on the national importance of timber, which opens with an impressive appeal for respect to growing trees, taken from the Portuguese, three-fourths of the book is occupied with an alphabetical descriptive catalog of the timbers of the world. This comprises some 450 woods, with their scientific names, countries of origin, weight per cubic foot "when dry", brief histological description and uses. All the woods in the British trade are included, together with Brazilian, Philippine, Formosan, Guianan and other kinds as yet hardly heard of here. A more complete review may be found in ("The Bulletin of the Imperial Institute"), Apr. - June, 1920, page 311.

KRAFT TO BE MADE IN JAPAN

Owing to various shortcomings and causes kraft wrapping paper is not being manufactured in Japan. The demand is only met with imported goods or with an imitation made there.

The Fuji Paper Mill, the second largest in Japan, together with its allied company, the Karafuto Industrial Company have just succeeded in producing kraft after considerable experiments and expenses. The necessary plants are now located at Ochiai, Saghalien by the Karafuto Industrial Co. and at Otomari, Saghalien by the Fuji Mill on account of its raw materials sources. They have installed each one machine and will turn out 6,000 tons to 10,000 tons annually. When these Companies offer this paper to the market, the imports will be greatly affected, if not checked, and any surplus besides the domestic consumption will be exported to China and to the eastern markets as well.

Technical Section

REVIEW OF RECENT LITERATURE

DYEING

A-13 The Manufacture of Lake Colors. H. H. Holden, **Paper Trade J.** 76, No. 15, 175, 177 (Apr. 12, 1923); **Paper Mill** 47, No. 15, 210 (Apr. 14, 1923); **Paper Ind.** 5, 160-161 (April 1923); **Paper** 31, No. 26, 126, 128 (Apr. 18, 1923). Brief description of the manufacture of red, yellow, blue, green and black lakes, with an enumeration of their merits for paper making. — A. P.-C.

A-13 Coloring Matters For Coated Paper. Norman Clark. **Paper Trade J.** 76, No. 15, 177, 179 (Apr. 12, 1923); **Paper Ind.** 5, 155-156 (Apr. 1923); **Paper Mill** 47, No. 15, 96, 98 (Apr. 14, 1923); **Paper** 31, No. 26, 57-60 (Apr. 18, 1923). A brief outline of the properties of basic, acid, direct, and special dyes, color lakes, pigments, and metals (for foil papers) from the standpoint of coated paper manufacture, together with a brief description of the methods of handling these coloring matters. A. P.-C.

A-13 Criticism of Ostwald's Color Theory. W. B. VanArsdel. **Paper** 31, No. 26,113-116 (Apr. 18. 1923). From a discussion of the Ostwald color theory from theoretical and practical standpoints, the author concludes that the theory has not met with the assent of those who are competent to judge it among other color theories, although parts of it seem to be valuable contributions to knowledge, and that the Ostwald methods of color measurement should be regarded by those who use them as only approximate. No process of technical colorimetry which is free from practical objections has yet appeared; but there is no warrant for adding to these practical difficulties the haziness of meaning due to an unsound theory. — A. P.-C.

A-14 The Work Of The Freight Container Bureau. Paper Trade J. 76. No. 11, 48-49 (Mar. 15, 1923). Tentative specifications are given for interior packing and preparation of refrigerators for crating, and for solid fiber and plyboard boxes for boots and shoes. — A. P.-C.

K-8 R-11 Investigation of Problems in Coloring in the Paper Mill Laboratory. Walter C. Holmes. **Paper Trade J.** 76, No. 6, 45-46 (Feb. 8, 1923). A discussion of the advisability of each paper manufacturer investigating his own color problems, and finding the solution best fitted to his own particular requirements, rather than depending on the work of the dye manufacturer who can devote only superficial attention to the problems of the individual paper manufacturer. — A. P.-C.

K-8 The Coloring of Paper. Andre Beltzer. **Industrie Chimique** 10, 106-109 (Mar. 1923). The author suggests that paper mills should equip themselves to manufacture their own dyes, and discusses the benefits to be derived therefrom. — A. P.-C.

DRYING

K-12 Temperature Equalizer For Paper Machine Driers. Geo. S. Witham, Jr. U.S. pat. 1, 438, 511, Dec. 12, 1922. Blasts of hot air are provided at various points between the web-forming mechanism and the calenders for maintaining approximately uniform temperature on both sides of the web as it passes through the machine, instead of having each side alternately dry and hot when in contact with the drier drums and then moist and cool when in contact with the felt. — A. P.-C.

K-12 A New Vapor Circulator For Paper Machine Driers. Paper Ind. 7, 1537, 1539 (Feb. 1923). A description of the Fulton system. — A. P.-C.

K-12 The Woodsome System Of Paper Drying. Paper Trade J. 76, No. 1, 54-59 (Jan. 4, 1923). After outlining a basis for measuring the performance of drying systems, the author describes the Woodsome system (protected by U. S. pat. 1,428,198, Sept. 5, 1922, and Can. pat. 221,536, Aug. 1, 1922). See **Pulp & Paper** 20, 769 (Sept. 7, 1922). — A. P.-C.

K-12 Drying More and Better Paper With Less Fuel. F. C. Farnsworth. **Paper Mill** 47, No. 12, 12,14, 46, 48 (Mar. 24, 1923). A discussion of the merits of the Farnsworth drying system. **Pulp & Paper** 19, 794 (July 28, 1921); **Paper Trade J.** 73. No. 2, 52 (July 14, 1921). — A. P.-C.

K-12 Dryer For Paper Machines. F. P. Reed assignor to C. C. Orcutt. U. S. pat. 1,432,735, Oct. 17, 1922; Can. pat. 227,489, Dec. 26, 1922. The paper web is supported on a wire cloth and passed over a series of drying units, each of which consists of an open top box-like casing containing electric heating elements. The web is kept under tension to ensure uniform drying without warping or bending. — A. P.-C.

K-12 Drier For Paper Machine. T. F. Pinder assignor to C. C. Orcutt. U. S pat. 1, 432,729, Oct. 17, 1922; Can. pat. 228,423, Jan. 30, 1923. The paper from the wet end of the machine passes into a chamber containing steam heating elements placed above and below, but not in contact with the web. Warm dry air is passed through the chamber in opposite direction to the paper. On leaving the chamber the paper passes through a pair of press rolls and through a series of finishing rolls. It then similarly goes through one or more exactly similar chambers. It then passes to a second section, similar in all respects to the first, except that it is equipped with electric instead of steam heated elements. A heat exchanger is provided for heating the dry air by means of the moist air exhaust from the drying chamber.— A. P. -C.

K-12 Drier For Marbled Paper. F. P. Reed assignor to C. C. Orcutt. U. S, pat. 1,432,731, Oct 17, 1922; Can. pat. 229,222, Feb,27, 1923. The drier consists of an open top casing in which are electrically heated elements and over which the paper web is passed supported on a wire cloth. A suction nozzle is arranged below the web for collecting and removing the vapor formed. — A. P.-C.

K-12 Drier. F. P. Reed and C. Nelson, assignors to American Coated Paper Co. Can. pat. [illegible] Feb. 27, 1923. Each drier unit comprises a casing having means for supporting and guiding the web. Heating means are provided both above and below the web and dry air is circulated continuously at both surfaces of the web. The units are so arranged that the temperature of the web is raised gradually, to eliminate surface drying and to permit removal of the vapor as it forms. The heating of the initial unit is provided for by waste heat from the succeeding units. The web may be made to follow a zig-zag path in one or more sections to insure sufficient drying. — A. P.-C.

K-12 Contribution To The Study Of Drying. R. Isnard. **Papier** 26, 217-224 (Feb.1923). An analysis of the heat losses at the driers of a paper machine (through the felt, by radiation, convection, condensation and at the traps), with suggestions for eliminating, or at least appreciably reducing them. The author concludes that the most efficient remedy is a properly designed ventilating system, by means of hot air; and he suggests that the air be advantageously heated by means of the flue gases from the boilers. — A. P.-C.

K-12 Drier For Paper. F. N. Vaccaro. Eng. pat. 177,307, Jan. 19, 1921. An electrically heated drying chamber, especially suitable for drying material in sheet form is divided into a lower and an upper compartment by a partition which leaves communicating passages at each end to permit free circulation of air from one compartment into the other. The lower compartment, through which the wet sheet travels, is provided at the botton with a number of heating elements, mounted on a heat reflecting plate, and so arranged that the distribution of heat on to the sheet can be varied at will; the heating elements are designed to be used with any type of current. The upper compartment contains moisture absorbent materials. Continuous circulation of air is effected by raising that end of the drying chamber at which the wet sheet enters; this causes the warm air in the lower compartment to flow in the opposite direction to that followed by the sheet, and then to pass into the upper compartment, where it is dried, during which operation it becomes sufficiently cooled to flow through the upper compartment back into the lower one, thus making a complete circuit through the apparatus. The part of the air most heavily laden with moisture remains close to the surface of the travelling sheet and passes with it out of the drying chamber. Drying may be immediately arrested, if so desired, by opening a number of doors fitted in the sides of the chamber. — A. P.-C.

K-12 Drying Of Felts And Paper On The Paper Machine. J. M. Voith, Ger. pat. 375,258, **Papierfabr.** 21, 264 (May 13, 1923). Instead of drying felts on cylinders in the usual way, they are passed around air heaters. The latter heat air which is blown against the paper sheet between the drying cylinders on the machine. — J. L. P.

K-12 Removal Of Water From The Paper Sheet On The Machine Wire. Otto Schmidt. Ger. pat. 374,750 **Wochbl. Papierfabr.** 54, 1371 (May 19, 1923). Suction rolls are so arranged as to remove the water from both surfaces of the sheet on the longitudinal paper machine wire. — J. L. P.

K-12 Process For Drying Paper. Ogden Minton. Ger. pat. [illegible] **Papierfabr.** 21, 199 (Apr. 8, 1923). The sheet is passed through a heated bath of mercury into a chamber in which air pressure is reduced, and out through a bath of hot mercury. — J. L. P.

K-12 Electrically Heated Rolls, Especially Calender Rolls. Siemens-Elektrowarme Gesellschaft. Ger. pat. 373,085. **Papierfabr.** 21, 226 (Apr. 29, 1923). The heating unit is located near and outside of the surface of the roll. — J. L. P.

K-18 Production Of Paper Board, Etc. Ger. pat. 364,565. **Wochbl. Papierfabr.** 54, 617 (Mar. 3, 1923). The fibrous mass, before converting to stock, is subjected while dry to a disintegrating and loosening treatment. — J. L. P.

K-18 Process Of Making Fiber Board. J. C. Peabody. U. S. pat. 1376,353, Apr. 26, 1921. A stock is prepared by adding alkaline cellulose thiocarbonate, glue, casein, viscose, or other colloidal or cementitious substance to a mass of fibres mixed with water, and this stock is diluted with water to which has been added such a quantity of the colloidal substance that the concentration of the latter is maintained practically constant. Sheets of paper or boards are then formed from the diluted pulp in the usual manner. — A. P.-C.

K-18. Fiber Board. M. Chew. Eng. pat. 178,155, Nov. 12, 1920. Chip waste is steamed, mixed with water, beaten in a ball mill or other beater to a fibrous, watery, pulpy mass, the fibers of which are unbroken but shredded, and then formed into a board and waterproofed. A binder such as talc, alone or mixed with ground asbestos, or soda ash, may be used, and hair or the like may also be added. The dried board is waterproofed by means of a mixture of calcium acetate and aluminum sulphate. — A. P.-C.

K-18. Manufacture of Millboard from Tanyard Refuse. A. T. Masterman. Eng. pat. 182,884, Apr. 6, 1921. Waste wattle bark or other tanyard refuse is crushed for 20 to 30 minutes in an edge runner in the presence of a solution of sodium carbonate or other alkali, and then, after admixture with about 20 to 30 per cent. of waste paper pulp, is beaten for about 2 hours with water at 45 to 50 deg. C. Engine size and alum, or gelatin alone, are added to the pulp during the beating process, and after leaving the beater the pulp is manufactured into board by ordinary processes. — A. P.-C.

K-19 K-23 Drying and Conditioning Of Coated and Other Papers. J. O. Ross. **Paper Trade J.** 76, No. 15, 171-174 (Apr. 12, 1923); **Paper Ind.** 5, 110-114 (Apr. 1923); **Paper** 31, No. 26, 104-109 (Apr. 18, 1923); **Paper Mill** 47, No. 15, 86-94 (Apr. 14, 1923); An outline of the development of the drying and conditioning process for coated, wall, waterproof, glazed, gummed, and sand papers, showing particularly the importance of proper conditioning of coated papers to prevent "change of register" in the printing room. — A. P.-C.

K-19 Preparation Of Paper For Coating. Associated Paper Mills Ltd. Fr. pat. 549,961. A completely finished web of paper (glazed or unglazed) is applied to a second web while the latter is still moist, and the two are united by passing through a suitable press and then drying. The tendency to curl is counteracted by applying the coating on the face that will tend to make the paper curl in the opposite direction. Two finished webs can be used, one of them being moistened before applying to the other. — A. P.-C.

(Continued on page 758)

PULP AND PAPER NEWS

The Federal Government has received tenders for harbor dredging and the construction of piers at Matane, P. Q. The object of the work is to develop the port in order that pulpwood from the Gaspe Peninsula may be shipped from Matane instead of being sent by rail to Levis, P. Q.

Mr. Rex B. Hovey of the technical staff of the Abitibi Company was in Montreal last week.

Mr. Frank W. Clarke, president and general manager of the Gulf Pulp & Paper Company paid a visit to Montreal last week. Mr. Clarke will leave in a few days for England.

The Great Lakes Pulp & Paper Company are calling for tenders for some of the equipment for the proposed mill. It is reported that the company will instal a 234 in. newsprint machine.

Mr. R. S. Kellogg, secretary of the News Print Service Bureau, with Mrs. Kellogg, is on an extended tour of inspection of the mills in Eastern Canada and Newfoundland. He is motoring to the various points. The program includes visits to Sherbrooke, East Angus, Three Rivers, Donnacona, Quebec, Kenogami and places in New Brunswick. From there he will go to Newfoundland and in order to inspect the new developments in the newsprint industry there.

The lumbermen of Montreal will hold a golf tournament on Wednesday, August 15 at the Beaconsfield Golf Club, Point Claire. The competition is open to the entire lumber industry of Montreal, irrespective of the section of the trade to which they belong. Four cups have been offered, three for the best net scores and the fourth for the best gross score. The arrangements are in the hands of a committee of which F. H. Devenish, B 32 Board of Trade, Montreal is the secretary. The competition will be followed by a luncheon.

A. P. Costigane, secretary-engineer of the Ontario Pulp and Paper Makers' Safety Association, has returned to Toronto after a visit of inspection to the following plants: Fort Francis Pulp and Paper Company, Fort Francis; Keewatin Lumber Company, Kenora; Dryden Pulp and Paper Company, Dryden; Fort William Paper Company; Thunder Bay Pulp and Paper Company, and the Provincial Mills at Port Arthur. In conversation with the Pulp and Paper Magazine of Canada, Mr. Costigane said that operations were being carried on in all of the mills visited. In some cases radical changes and improvements are being made which should tend greatly to a reduction of accidents. The extensions and alterations in the Provincial Paper Company's mill at Port Arthur and at the plant of the Fort William Paper Company are along most modern lines, he said, and care has been taken to safeguard machinery as far as possible before putting it into operation. "On the whole accident prevention among the mills in Northern Ontario is a very live issue and is receiving support from both management and employees," said Mr. Costigane.

H. Humphreys, Secretary-Treasurer of the Dryden Paper Co., Limited, Dryden, Ont., has issued a statement referring to the recent sale of the Trout-Chapleau pulpwood limits, refuting the statement that appeared in the public press to the effect that "according to the department the primary object of the transaction is to establish for the first time in Ontario's history a kraft paper making industry". Mr. Humphreys points out that his company has been manufacturing kraft pulp continuously for the past ten years. Since 1918 the company has also been supplying a large tonnage of kraft paper to the West, and has built up a considerable export business of this line of paper to New Zealand and other parts of the world. The manufacture of kraft paper and pulp is no new venture in Ontario's paper making industries.

For the third successive summer the Extension Department of the University of Toronto is holding a short course in journalism. The course will begin at the University on August 13 and will continue for a week. It consists of 25 lectures, some on technical and some on cultural subjects given by the University staff and prominent newspapermen.

W. P. Bennett, President of the Rudd Paper Box Company, Limited, Richmond Street, Toronto, has returned from an extended trip through to California and returning via Western Canada. The trip through Canada was of a business character, Mr. Bennett calling on the paper box making trade from the coast east. He reports business conditions throughout the West in the container line as promising and he was deeply impressed by the outlook for trade in the West generally.

Walter Crainston, of Stokes & Smith Co., Philadelphia, manufacturers of paper box making machinery, was a caller on the trade in Toronto last week.

The St. Thomas Paper Box Company, Limited, St. Thomas, is the latest member to be enrolled on the books of the Canadian Paper Box Manufacturers' Association.

It is interesting to note in connection with the agitation for better forest fire protection measures that the Abitibi Power and Paper Company, Ltd., has had an efficient fire service in operation all spring and summer, and it is likely that other companies will follow suit in this respect. The company's woodmen supplement the Government's fire service throughout the limits, and especially along the railway tracks, where the danger of fire is the greatest. The company's fire rangers, in fact, are under strict written orders to take their instructions from the Government rangers in case a fire breaks out, and supply them with all available equipment. In such an event the company rangers, the pumps, tanks and all other appliances would be automatically under the orders of the Government rangers in charge. Among the company's precautions against fire is a tank car with a capacity of 7,000 gallons and 2,000 feet of hose. There is also a pump with a capacity of 55 gallons per minute that goes along the line. Additional hose can be loaded on a speeder and sent to any place on the line. From a look-out tower, fifty feet high, situated on the top of a rocky hill, a view can be secured of the surrounding country in every direction for a distance of twenty miles. A pair of the very finest field glasses is at this point for the use of the rangers. Both of the company's rangers carry chemical fire extinguishers on their cars. Large signs in French and English at various points warn strangers of the danger of fire and how to avoid such a contingency.

R. W. McLellan, of Fredericton, N. B., Secretary of the New Brunswick Lumbermen's Association, is being freely mentioned as a likely man to form one of the Royal Commission to be appointed by the Dominion Government to enquire into the pulpwood situation preliminary to a definite decision as to whether or not to put an embargo on pulpwood going from Canada to the United States. Mr. McLellan for a number of years has been actively associated with the pulpwood and lumber industries and is considered to be familiar with the situation in Canada. Several leading lumbermen and pulpwood men in the Dominion have endorsed the idea that he be a member of the commission.

H. G. French, of the Allan Paper Company, Simcoe Street, Toronto, was appointed Grand Senior Warden of the Grand Lodge of Canada at the meeting in Toronto last week of the Masonic Grand Lodge.

H. J. Shanley, Jr., of the Chemical Paper Manufacturing Company, Holyoke, Mass., was a business visitor in Toronto last week.

George Allan, of the Buntin Reid Company, Limited, Toronto, has returned after an enjoyable outing in Northern Ontario where his piscatorial skill resulted in the landing of some nice catches.

Percy B. Macguire, city salesman at Toronto for the Provincial Paper Mills, Limited, is spending a few days at Orchard Point Inn, Atherley, Ont.

The death took place in Toronto last week of Rev. Peter Moerdyke, father-in-law of S. F. Duncan, secretary of the Provincial Paper Mills, Limited. Mr. Duncan accompanied the remains to South Bend, Indiana, where interment took place.

JOHN F. CARROLL GIVEN SEND OFF

Port Alice, July 10. — The residents of Port Alice held a farewell social on the above date as a send off to Mr. John F. Carroll who has been resident manager for the Whalen Pulp and Paper Mills Limited at the Port Alice Plant during the past eighteen months.

The entertainment consisted of dancing, songs and recitations which were enjoyed by all. Among those who sang were Mrs. MacRae, Mr. C. Mills, Mr. P. C. McGhee, Mr. Watson, and Mr. Stuart, and Mrs. Millard gave some pleasing recitations.

In the course of the evening a speech was made by Mr. J. J. Needham in which he thanked Mr. Carroll on behalf of the community for his many kindnesses and the interest he had displayed in the welfare of Port Alice during his residence here. Mr. Carroll, in reply thanked the citizens of Port Alice for their co-operation during his residence and stated that his success as resident manager was due more than anything to the loyal support of the Port Alice employees. Mr. Carroll was presented with a fine club bag by the heads of departments in token of their esteem and during the past week he was also presented with an engraved silver shield by the school children of the town with whom he has always been a great favorite.

Mr. Carroll is leaving Port Alice to take charge as general manager of a two hundred and fifty tons mill in Michigan, in which he is interested.

Light obeyed increaseth light; light resisted bringeth night.

CANADIAN EXPORTS OF PULP AND PAPER SHOWED LARGE INCREASE IN JUNE

A report issued by the Canadian Pulp and Paper Association shows that exports of pulp and paper in June were valued at $12,368,456. This is an increase of $809,772 over the previous month, and is the second highest total for the year.

The values of the various items exported were as under:

PAPER

	June, 1922		June, 1923	
	cwts.	Value.	cwts.	Value.
Newsprint	1,729,585	$6,136,649	1,857,049	$7,006,722
Book paper	1,214	7,564	7,981	53,150
Other paper & Mfrs.	.....	613,311	......	799,812
		$6,757,524		$7,859,584
PULP				
Sulphate	262,175	$ 801,395	245,409	$ 823,847
Sulphite, bleached ..	238,375	920,652	272,561	1,167,411
Sulphite, unbleached	430,016	1,086,909	466,468	1,239,910
Mechanical	751,121	968,396	795,520	1,277,604
	1,681,687	$3,777,352	1,779,958	$4,508,772

Exports of newsprint last month were greater than in June, 1922, by 127,464 cwts. Book paper showed a big increase, and total pulp exports were greater by 98,271 cwts.

The exports in June were distributed as follows:

	Paper.	Pulp.	Total.
U. S. A.	$6,998,665	$3,052,959	$10,051,624
United Kingdom	210,703	999,034	1,209,727
All other	650,316	456,779	1,107,095
	$7,859,684	$4,508,772	$12,368,456

The figures for the first three months of the current fiscal year show a considerable improvement over those for the corresponding three months in 1922. For April, May and June of this year the total pulp and paper exports were valued at $33,324,612, as compared with a total of $25,548,065 for the corresponding three months of 1922.

For the three months' periods the figures were as follows:

PAPER

	Three months 1922		Three months 1923	
	cwts.	Value.	cwts.	Value.
Newsprnit	4,474,288	$15,869,712	5,404,626	$20,321,885
Book paper	1,811	12,668	13,438	89,911
Other paper	......	1,346,876	......	1,904,626
		$17,229,256		$22,315,422
PULP				
Sulphate	676,913	$2,076,515	671,279	$2,205,797
Sulphite, bleached ..	651,180	2,562,802	796,986	3,486,552
Sulphite, unbleached	821,899	2,134,053	1,100,865	2,998,681
Mechanical	1,205,197	1,545,439	1,445,753	2,318,160
	3,355,189	$8,318,809	4,014,883	$11,009,190

Canadian exports of pulpwood in these three months amount to 385,511 cords, valued at $3,524,447, compared with 200,675 cords valued at $2,031,786 in the corresponding three months of 1922.

Estimated Swedish pulp shipments to all countries for 1923 total 533,200 long tons, as against 651,000 tons in 1922. Of the latter amount, 205,500 tons were sent to the United States and 1923 shipments to the United States to June 8 were 103,800 tons.

When a man reaps the whirlwind, he is always astonished at the crop.

Give a lie a day's start, and truth will have to chase it round the world.

K-19 Manufacture Of Glazed Paper From Unglazed Or Slightly Glazed Paper. Associated Paper Mills, Ltd. Fr. pat. 549,960. Coating composition is applied to the unglazed paper, which is heated either before, during, or after application of the coat so as to facilitate penetration of the adhesive into the body of the paper, leaving just enough at the surface of the paper to hold the coating material. The other side is then glazed in any suitable manner. — A. P.-C.

K-20 Apparatus For The Manufacture Of Parchment Paper. N. Nakamura. Jpn. pat. 38,110, Feb. 26, 1921. Sulphuric acid is sprayed from vertical parallel pipes on both sides of the paper, which is then washed with water and passed through 5° Be. caustic soda solution. — A. P.-C.

K-20 Parchmentizing And Impregnating Paper With Phenol Condensation Products. H. C. P. Weber assignor to Metropolitan-Vickers Electrical Co. Eng. pat. 169,451, Sept. 22, 1921. The paper is parchmentized by treating with caustic soda, sodium zincate, and other suitable substance, and is then impregnated successively or simultaneously, and before or after removal of the parchmentizing agent, with a phenol and formaldehyde and subjected to heat and pressure, whereby a condensation product intimately incorporated with the fibers is obtained. Alternatively, the fibrous material is parchmentized and impregnated at the same time with a mixture containing the parchmentizing substance, phenol, and formaldehyde. For example, the paper is continuously passed through a parchmentizing bath containing 20% caustic soda (10 to 15% sodium chloride is added to prevent excessive shrinkage), then in succession through a bath containing phenol and a chamber containing formaldhyde vapor and between hot rollers under pressure. It is afterwards washed and dried. — A. P.-C.

K-20 Parchmentized Or Vulcanized Paper. B. Herstein. U. S. pat. 1,429,427, Sept. 19, 1922. Sheets are formed of layers of paper the cellulose of which is nitrated to contain not in excess of 4.5% nitrogen, cemented together by superficial gelatinization induced by treating the weekly nitrated paper with an alkali, e.g., caustic soda. — A. P.-C.

K-21 Manufacture of Roofing Felt. H. Wade and Barrett Co. Eng. pat. 166,886, July, 7, 1921. Addition to 165,240. The process described in the chief patent is modified, whereby the sheets consisting of mixed watery pulp and comminuted bituminous water-proofing materials are subjected, at a temperature exceeding the softening point of the bituminous material, to a pressure sufficient to reduce their volume by one-half. —A. P.-C.

K-21. Saturating Sheets with Bituminous Material. L. Kirschbraun. U. S. pat. 1,417,841, May 30, 1922. A hot bituminous composition is applied in liquid form to one face of a hot dry sheet as it is being wound in a roll. — A. P.-C.

K-21 Waterproofed Fiber Board. L. Kirschbraun. U. S. Pat. 1,417,836, May 30, 1922. Several plies of fiber board are saturated with a waterproofing composition and united to one another with Portland or magnesite cement or other adhesive material. A granular facing material such as gravel may be applied to the exposed surface of the built-up sheet to adapt it for use as roofing.—A. P.-C.

K-22. Colored Tissue Paper. F. M. Shuler assignor to A. E. Dubey. U. S. pat. 1,428,064, Sept. 5, 1922. Tissue paper is coated on opposite sides with sizing of different colors which is heated to effect immediate setting. — A. P.-C.

K-23 Method of Making Emulsions. L. Kirchbraun. U. S. pat. 1,417,835, May 30, 1922. A bulk supply of emulsion is formed by making a mixture of water and colloidal clay, adding a waterproof adhesive binder, and thoroughly mixing into an emulsion in which the binder forms the internal phase and the water and emulsifying agent the external phase. Further quantities of water and colloidal clay and of binder are separately fed into the bulk supply, the latter being agitated while forming the emulsion. — A. P.-C.

K-23. Process of Making Waterproof Composition. L. Kirschbraun. U. S. pat. 1,417,837, May 30, 1922. Bituminous material in the form of discrete particles is suspended in an aqueous mixture which also contains an oxidizing agent such as driers or sulphur to prepare a composition adapted for waterproofing fiber board. — A. P.-C.

K-23. Colored Bituminous Composition and Process for Making Same. L. Kirschbraun. U. S. pat 1,417,838 May 30, 1922. A yellowish brown pitchy material of conchoidal fracture when cold, adapted for making roofing, is obtained by steam distillation of wax tailings. — A. P.-C.

K-23 Waterproof Sheet Material. L. Kirchbraun. U. S. pat. 1,417,839, May 30, 1922. A colored emulsified matrix is formed from materials such as clay and pitch from petroleum wax tailings mixed with dyes and fibrous materials of a different color from the matrix materials and mottled sheets are formed from the mixture. — A. P.-C.

K-23 Method of Waterproofing Paper. F. Moeller. Eng. pat. 184,462, Aug. 1, 1922. The material is waterproofed by treatment with thionyl chloride or sulphur chloride or dichloride in the atomized state. The liquid may be sprayed in a chamber by a sprayer and thence carried by a pipe to the treating chamber through which the paper is passed. The circulating system contains a drying apparatus for separating sulphurous and hydrochloric acids, and a blower. The paper may be alternatively passed over a porous block saturated with the reagents; or the latter may be applied by porous rollers dipping into the liquid or by rollers sprinkled with it.—A. P.-C.

K-23. Metallized Paper for Making Electric Cables. M. Hochstader. Eng. pat. 186,363, Mar. 29, 1921. Same as Fr. pat. 533,710. See "Pulp and Paper" 20, 658 (Aug. 3, 1922); **Paper Trade** J. 75, No. 7, 57 (Aug. 17, 1922.) — A. P.-C.

K-23, L-4. Composition for Coating and Impregnating Fiber. E. T. Oakes. U. S. pat 1,411,371, Apr. 4, 1922. The composition is prepared by heating tung oil to gelatinize it, subdividing the product and adding solvent naphtha or other liquid which will cause the finely divided particles to swell in suspension. The product is suitable for waterproofing paper receptacles. — A. P.-C.

K-23 Waterproofing Composition. G. A. Richter, W. B. Van Arsdel and D. H. White. U. S. pat. 1,396,527, Nov. 8, 1921. A composition adapted for waterproofing fiber tubes is formed by heating together 25 to 60 parts of gilsonite, 25 to 70 parts of paraffin and 5 to 10 parts of petroleum oil. The mixture melts at 50 to 60 deg. C. — A. P.-C.

K-23. Waterproofing Paper, W. Hoskins. U. S. pat. 1,430,998, Oct. 3, 1922. Insoluble soap, e.g., calcium or zinc stearate or resinate, is sprinkled or dusted on the surface of paper and all except the adhering particle are then removed. — A. P.-C.

K-23. Asbestos Paper. J. Fox and Turner Bros., Asbestos Co., Ltd. Eng. pat. 166,799, June 17, 1920. Thin asbestos paper suitable for insulating or tape for electric purposes is reinforced with Japanese tissue paper secured thereto by starch, gum, varnish, shellac, size or the like. — A. P.-C.

K-23. Waterproofing Paper. L. Kirschbraun. U. S. pat. 1,401,791, Dec. 27, 1921. A paper stock which can be felted on a paper machine is formed of fibrous pulp and a waterproofing emulsion which may contain asphalt or coal tar pitch, clay and water. — A. P.-C.

K-23. Waterproofing Composition for use on Fibrous Material. A. O. Tate. U. S. pat. 1,400,579, Dec. 20, 1921. A waterproofing composition adapted for use on paper is formed of an aluminum soap, albumin, zinc oxide, and carbon tetrachloride of gasoline. — A. P.-C.

K-23 Waterproofing Composition for Paper. J. R. Hyer. U. S. pat. 1,405,220, Jan. 31, 1922. The mixture contains paraffin, rosin and magnesium sulphate. — A. P.-C.

K-23 Insect-Proof and Waterproof Paper. T. Oishi and Ohbakyo Seishi Kabushiki Kaisha. Jpn. pat. 38,494, Apr. 23, 1921. A mixture of pasty **Hydrosme revieri** (0.4 to 0.7 per cent aqueous solution), $O.2Na_2CO_3$ $NaHCO_3.2H_2O$ and 6 parts of cupric ammonium arginate solution (5 per cent) is painted on strong paper and dried. — A. P.-C.

K-23 Safety Paper For Financial Uses. Georges **Fournier. Fr. pat.** 548,230. In the last stages of the preparation of the stock, microscopic particles are incorporated with the stock, which will characterize any **given run** of paper by their nature, number and color. They must not react with the stock nor with any of the ingredients of the paper, must be stable and must not alter the surface of the paper in such a way as to interfere with proper printing. The inventor mentions vegetable spores, dead bacteria, and mineral powders having definite crystal structures, either colored or uncolored, as being particularly suitable. — A. P.-C.

K-23 The Peculiarities Of Photographic Paper. Alfred B. Hitchins. **Paper Mill** 47, No. 15, 218,220 (Apr. 14, 1923); Paper 32, No. 1, 5-6, 21 (Apr. 25, 1923). Brief outline of the requirements of raw photographic stock, and of the results obtained by a large U. S. papermaking firm (not named) in supplying the need caused by interruption of French and German importations during the war. — A. P.-C.

K-23 Uniting Waxed (Paraffin) Paper And Foil E. A. Bradshaw. Can. pat. 227,922, Jan. 1, 1923. The wax paper and foil are taken from separate rolls and brought together over a guide roll into contact with a heated surface (the foil preferably engaging the heated surface). The heat melts the adjacent surface of the paraffin paper which is then immediately brought into contact with a cooling surface so as to harden the melted wax into the surface of the foil. — A. P.-C.

K-23 Waterproofing Pulp. Fritz Moeller. Ger. pat. 370,198. **Zellstoff u. Papier.** 3, 55 (Mar. 1923). The dry fibrous material is exposed to the vapors of thionylchloride or sulphur chloride, with the addition of heat if necessary. — J. L. P.

K-23. Oiled Paper. S. Sparks. U. S. pat. 1,444,217, Feb. 6, 1923. Oil is applied to portions only of a strip of paper and the paper is then passed over rollers and [illegible] to permit diffusion and penetration of the oil. — A. P.-C.

K-23. Rendering Paper Transparent. O. Poeppel. U. S. pat. 1,444,087, Feb. 6, 1923. Paper for window envelopes is coated with a lacquer at certain portions and then passed through a heated chamber where the heating and motion of the paper cause impregnation with the lacquer and render the paper transparent. — A. P.-C.

K-23. Moisture-Proof Creped Paper. A. E. Currier. U. S. pat. 1,390,276, Sept. 13, 1921. Paper is brought into contact with a wax block just before being acted on by a creping roll. — A. P.-C.

K-23. Manufacture of Filter Paper. F. E. Thomas and J. Baker Sons and Perkins, Ltd. Eng. pat. 189,562, Sept. 6, 1921. Filter paper, capable of retaining very fine coarsely-dispersed precipitates and colloidal matters, is prepared in the usual manner from pulp incorporated with 5 to 30 per cent. (calculated on the weight of air-dry pulp) or finely ground decolorizing carbon. — A. P.-C.

K-23. Vulcanizing Rubber Latex Paper. F. Kaye. Eng. pat. 191,446, Oct. 8, 1921. Addition to 167,935. A small quantity of a sulphide of an alkali or alkaline-earth metal is added to the rubber latex, e.g., 12 oz. of sodium sulphide to one gallon of latex containing 30 per cent. of rubber. The treated latex is then diluted and added to the beaten pulp in the manner previously described. A suitable quantity of acid or hydrolyzable salt is then added to precipitate the rubber on the fiber and to decompose the dissolved sulphide. The colloidal sulphur thus produced effects the vulcanization of the rubber during the subsequent drying operation. Substances capable of accelerating vulcanization may be introduced into the beaten pulp either before or after the addition of the latex. — A. P.-C.

The Action of the Beater

By Dr. SIGURD SMITH, of United Paper Mills, Denmark

(Translated into English by Major RENOLD MARX, M.C., B.Sc.

Published under the auspices of the Technical Section of the Papermakers' Association of Great Britain and Ireland, 1923.

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UNITED STATES NOTES

The properties and assets of the American Strawboard Company, which had been declared bankrupt in the United States District Court in Chicago, was sold last Thursday to a committee representing various individuals and corporations for $1,588,300. The company operated mills in Circleville, Ohio; Wilmington and Quincy, Ill.; Noblesville, Ind., and Winchester, Va. The estimated value of the properties was $3,500,000.

Tentative plans for the construction of a pulp mill costing about $500,000 to add to the present establishment in Memphis are being considered by the Indiana Board and Filler Company of Vincennes, Ind. John S. Waters, treasurer of the company, was a visitor in Memphis last week for a survey of the Memphis plant and for conference with officials. The plant being operated at present by the Vincennes firm was recently purchased from the Tennessee Fiber Company. It is now manufacturing egg-case fillers. Enlargement of the Memphis plant to include a pulp mill that will manufacture straw and chip board has been decided upon.

The Wall Paper Manufacturers' Association and the National Wall Paper Wholesalers' Association held meetings last week at the Hotel Commodore, New York. Lines of wall paper for the 1924 season were shown in connection with the meetings. The feature of the new lines shown by the thirty-seven manufacturers represented was the great amount of attention given to figured papers in tapestry, damask, engravure and staple combination effects. The main sentiment of the gathering, which took on the air of a convention, was that the stipple or monotone paint or paper vogue is on the decline. The better class homes, it is asserted, are now choosing the figured papers, which for some time have been in the discard. The showings of the new lines were held earlier this year than usual, and jobbers are understood to have agreed to place orders for 25 per cent. of their requirements by August 15. Wholesale prices are said to show a small advance over last year.

Shipments of newsprint from Finland have been held up at Baltimore by the collector of customs there pending an investigation of charges alleging dumping. A general investigation has been ordered by the customs service into alleged dumping of Finnish newsprint on the American market.

Close to 100 stationery firemen in the paper mills of Holyoke, Mass., went on strike last week to enforce demands for a wage increase. The men walked out at the fifteen local divisions of the American Writing Paper Company and independent mills in Mittineague and Woronoco. The mills of the Chemical Paper Company and the Crocker-McElwain Company are not affected as they are paying the scale demanded. Other independent mills, including the American Tissue Mills, Valley Paper Company, Hampshire Paper Company and Carew Paper Company are not affected just now, as negotiations relating to the wage scale demanded are being conducted.

The agents of the Hammermill Paper Company will hold their annual banquet and field day August 23 and 24 at the Kahkwa club, Erie, Pa.

A merger affecting the Union Paper Products Company and the New Orleans Corrugated Fibre Box Company, Inc., both of New Orleans, has just been completed. As a result of the combine a new concern, to be styled the New Orleans Corrugated Box Company, and capitalized at $500,000, will operate at the plant of the Union Company manufacturing boxes and boxboard. The old plant of the Corrugated Fibre Box Company is to close and the buildings will be offered for sale. The officers of the new company are: Sam Ohnstein, president and manager; Harold Levy, vice-president; Jack Levy, secretary; Alexander Lisse, treasurer.

The United States Tariff Commission has ordered a re-hearing, beginning August 13, of the casein tariff question. Coated paper manufacturers of the Kalamazoo Valley and many from other localities will visit Washington to present facts and figures. The Commission desires to give all interested parties a chance to be heard on the question.

Harry Clair, Samuel Clair and Minnie Clair, of Philadelphia, are rapidly developing the business of the Progressive Paper Company, recently organized. The concern specializes in pattern, gum tape, corrugated products and many lines of coarse papers. Harry Clair, the president, was associated for some years with the Saxe Paper Company.

The annual engineering conference of the General Electric Company's paper mill specialists was held at the G. E. works in Schenectady, N. Y., July 10 and 11. The showing of a complete miniature electric steam boiler modelled after the full sized units of the G. E. Company featured the meeting. There was also an exhibit of a complete section of the new G. E. sectional paper machine drive.

Alleging that the rate of 33.5 cents per 100 pounds on newsprint paper from Thorold, Canada, to New York City is unjust, the Tribune Company of Chicago, the News Syndicate Company of New York, and the Ontario Paper Company, of Thorold, Can., have filed a formal complaint with the Interstate Commerce Commission against the Canadian National Railways, the Delaware, Lackawanna & Western, the Erie, the Pennsylvania and other railroad companies, asking for $15,000 reparation on these alleged overcharges.

According to the monthly bulletin of the American Paper and Pulp Association, there are already indications of resumption of activities in the paper industry earlier than usual in the fall. The bulletin says: "The only disturbing factor would be an effort by labor to secure advances as soon as the mills are busy with surplus orders. Paper labor is already back to the peak of 1920, while paper prices have never returned to the levels of that year. There is every reason to anticipate a high volume of business extending well into 1924. The fine paper mills are even in the summer dullness operating with 85 per cent. of orders. Book and wrapping mills in many localities are running at capacity. The book paper demand is increasing."

The Markets

Montreal, June 24. This is the slack season for the local paper trade, and it is not surprising to learn that business is on the slow side. While there is no actual depression, the orders are not coming in at a very satisfactory rate, and these have to be pretty diligently drummed up. The printing section is quiet, and a valuable source of business is thus curtailed.

Those who are inclined to take a pessimistic view of general commercial conditions will find no support for their opinions in the trade returns for June. These were the best for any June since 1920, and show a favorable balance of $9,118,000. With one exception, the main groups of exports indicated increases, as compared with June last year, some of the gains being very substantial. Forest products continue to advance, exports totalling $25,146,150 as compared with $20,022,455 in June of last year. Imports for June of this year were also higher, the chief increases being in agricultural products, iron and steel and non-metals.

From the domestic and export points, the pulp and paper industry is in a healthy condition. The fact that the Brompton Pulp and Paper Company has been able to clear up the arrears on the preferred stock is evidence of a gradual recovery.

The most serious question affecting the industry as a whole is the destruction by fire of our raw supplies. This is much greater than is generally supposed, and calls for more drastic measures to prevent these periodical outbreaks. The Companies are spending large sums in order to obtain the best results from manufacturing, and at the same time are losing actually enormous sums owing to fires which are mostly preventable. Those who violate the laws and thus cause this waste should, on conviction, be sent to prison without the option of a fine.

With regard to newsprint, the demand is keeping up very well, and is in advance of this time last year. The statistics of the average number of pages issued by the daily papers of the U. S. are significant. Usually during the summer the number of pages decline, but this year the number during the months of March, April, May and June have remained at an average of 28, against 25½ during the corresponding period last year.

In the pulp section, there is no change of any note. Groundwood remains in good request, at firm values, and with comparatively little offering. Sulphite is steady, while bleached is on the old basis, fair orders and good prices.

According to the report of a lumberman who has just returned from an extended visit to the Abitibi district, the amount of pulpwood cut there has been considerably reduced as compared with the previous season. The mills preferred to put the lumber into lath, for which there has been a very heavy demand.

Ontario Market News

The paper trade in Ontario is still suffering from the effects of the summer holidays and business generally is quiet. Production is keeping up fairly well. For instance mills running on S. C. book report a good demand for that line, although the call for bonds, writings and ledgers is very light. Although there is not the output of any line of paper just now that there was a few months ago manufacturers say that the outlook for increased demand in the fall is good. Board mills are operating lightly although the recent drop in price has somewhat stimulated the demand and there is a fair amount of buying. Wholesalers report a rather brisk demand for the cheaper grades of mill blanks and boards of this class are selling well, due probably to the extra work entailed by the approach of the National Exhibition. That big Canadian institution is responsible for a lot of printing and the consumption of vast quantities of paper and both printers and paper distributers are beginning to reap the benefits. Outside of this line of work, however, the printing trade is quiet, some of the firms closing down all day Saturdays during the summer months. This applies to centres like Toronto and Hamilton and travellers report that paper buyers in the province generally are not taking in any stocks. The experience of most of the salesmen for the city houses is that the average small printer in the province now does not buy his paper until he has his job locked up on the stones. This hand to mouth buying has extended to some extent to the wholesale jobbing houses very few of which are laying in any paper stocks of size. Competition is rife amongst the wholesalers in most paper lines and the printer, paper converter and other users are getting the benefit. The envelope manufacturing trade is fairly good and a considerable amount of the cheaper grades of blotting is being sold. Little of the higher grades of blotting is being called for which indicates the desire on the part of the consumer to keep down his printing and paper bills. The paper box industry is going along nicely and shows a sound tendency despite the fact that at the moment business is rather quiet. One leading Toronto paper box maker declared that the industry was on a decidedly healthy basis and that business now was better than it was a year ago, with a decidedly bright outlook for the future. He looked for a greatly stimulated demand for all paper lines in the fall.

RAG AND PAPER STOCKS. —The market for waste paper shows a firmer tone, collectors reporting that throughout the recent slump the prices of the better grades have held up very well. In the rag market the demand for thirds and blues is good, while the various grades of new cotton cuttings are keeping up fairly well considering the time of the year, and prices are fair. The rope market is reported as rather quiet. The following prices prevail: paper stock, No. 1 hard white shavings, $3.90: No. 1 soft white shavings, $3.30: heavy books and magazines, $1.60: ledgers and writings, $2.00: No. 1 kraft, $2.25: newspapers, $1.00: No. 1 mixed papers, repacked, 85c: No. 1 miscellaneous, 75c: No. 2 miscellaneous, 57½c: Rags, thirds and blues, repacked, 2½c: No. 1 white shirt cuttings, 12¼c to 12½c: fancy shirt cuttings, 5¼c to 5½c: canton flannel, bleached, 10½c to 11c: white lawns, 9c to 9¼c: blue overall cuttings, 7c to 7¼c: No. 1 manila rope, 5¼c to 5½c: mixed strings, 1¼c.

PULP. —There is no material change in the pulp situation. As far as can be learned stocks in the hands of pulp manufacturers are just about normal and none of the paper manufacturers are carrying excess stocks. There is comparatively little activity in the market on the part of either buyer or seller. Prices are holding fairly firm, groundwood still being quoted at $38.00. Bleached sulphite is selling at from $80.00 to $90.00; unbleached at from $65.00 to $70.00 and news grade at from $60.00 to $75.00.

NEW YORK MARKETS

New York, July 21. —(Special Correspondence)— The markets in New York have been featured this week by developments in raw material. Nearly all kinds of raw stock consumed in the manufacture of paper have taken on a firmer price tone and in quite a few cases advances of no mean dimensions have occurred. In a majority of instances the rise in prices has been due to better demand from mills though in certain cases prices of raw material have advanced simply because of a shortage of goods. However, the fact that papermakers have been more actively in the market for raw stock would indicate that they are laying plans for broader manufacturing operations in the near future, and that they expect a good demand for paper to arise shortly.

Generally speaking, business in paper of most kinds has been quiet. Of course newsprint and book papers are moving in abnormally large amounts; there has been little or no recession in demand for these grades, but buyers have continued to limit their orders for other descriptions of paper, and jobbers have experienced a rather narrow trade, with the result but a limited number of orders has been placed with mills for fresh supplies of paper.

Newsprint is moving in a steady way in heavy tonnage. Possibly consumption has decreased slightly during the past fortnight. July and August invariably find publishers, particularly of afternoon papers, cutting down the size of their issues, owing to a decrease in display advertising, but the morning dailies are still putting out large issues, while Sunday issues are just as large as they have been at any time this year. Print paper mills are busily engaged. Most of them are operating at full capacity and are shipping out their product about as quickly as it leaves the machines; moreover, a good many of them have their output for some time ahead sold on contract so that they have nothing to bother about as regards operations for quite a while to come. Prices of newsprint are firm to an extreme. Spot shipments are fetching premiums, and there is but limited tonnage offered by manufacturers.

Book papers are steadily increasing in activity. There have been cases where some individual book mill has been in want of business and has cut prices with a view of corralling a lot of orders, and this has made for some irregularity in quotations, but prices in the long run display considerable steadiness, and most manufacturers are so well fixed with orders that they are not obliged to change their prices to attract buying.

There is but routine business in wrapping papers. As previously reported, imported supplies of kraft wrapping are serving to diminish business in the domestic product for the reason that importers are selling foreign paper at cheaper prices and that consumers find Swedish kraft equally as good in quality, if not better, than the home made paper. However, converters are absorbing fair amounts of domestic kraft wrapping, and demand from such sources keeps mills moderately well engaged.

Fine papers are enjoying a relatively better demand than is usually the case in mid-summer. Reports from manufacturing centres generally tell of manufacturers running their plants at a good rate of capacity, and it is stated that but little of their current production is going into stock. Writing paper mills in the Holyoke district are having some difficulty with labor. After the strike of machine hands was averted the stationery firemen walked out because of a wage disagreement, and it is understood that most of the fine paper plants in that locality have been obliged to close down or curtail their operations this week.

Box boards show little change. The movement of boards is fair but there is nowhere near sufficient business to keep all the mills running full. A four-day per week schedule is still in effect at most plants, it is reported. Prices ruled steady at about $57.50 per ton f.o.b. New York for plain chip board, with some mills quoting the same price for news board and others asking $2.50 per ton higher or $60 for news board. The active season for boards is drawing near, and it is probable that demand will soon increase. Furthermore, it is likely prices will rise since waste paper, the chief raw material for the board mill, is displaying a strong advancing trend.

GROUND WOOD.— Reports almost without exception tell of a firmer market for mechanical pulp. It seems that the increased firmness is due as much to conditions at the producing as at the consuming end; in fact, many attribute the strengthening of quotations almost entirely to low water at grinding plants and the consequent reduction in production, which has prompted grinders to hold unsold stocks of pulp and in some cases to ask slightly higher prices. At any rate, the quotations named are invariably above the levels prevailing only a short while ago. Domestic producers want between $36 and $40 a ton f.o.b. pulp mills for prime spruce ground wood for prompt shipment, prices of course depending on the haul to consuming centres and the freight involved, while quotations from Canadian manufacturers are reported ranging around the $38 per ton mark. Newsprint mills are consuming ground wood in large tonnage and there is a fairly good call from other consuming sources, and it is asserted on good authority that grinding operations have diminished in numerous localities where mill streams are falling.

CHEMICAL PULP.— Chemical pulps display a stiffening price trend. No actual changes of importance have developed this week but the tone of values is firmer and it would seem as if at least slight advances were in order. Importers in particular are quoting pulp at firm prices. One reason for this is that the prices named by manufacturers on the other side of the Atlantic are at higher levels — in some cases beyond a parity with market levels here — while another reason seemingly is that there are but small quantities of foreign pulp on the spot in this country unsold. Sales of prime unbleached Swedish sulphite have been recorded at $70 a ton ex dock New York, and Scandinavian kraft pulp has sold at 3.35 cents per pound on the dock. Foreign bleached sulphite is quoted at around 4.75 cents a pound ex dock for the No. 1 grade, with secondary quality available at around 4.25 cents.

Domestic pulps are holding their own in price and are moving in fair volume though chiefly on contract.

There is a good call for kraft and one of the largest manufacturers of this kind of pulp on this Continent reports receiving 4 cents a pound delivered consuming mills for all of his No. 1 kraft.

RAGS. — Increasing strength in low grades of rags as used by felt paper mills features the papermaking rag market. No. 1 roofing stock has sold this week at 1.45 cents a pound f.o.b. New York, and No. 2 stock at 1.30 cents New York. Certain felt mills have been actively in the market and have freely paid these figures, and the situation has tightened to the point where dealers are very cautious about booking orders for roofing rags owing to the scarcity of such material in packing circles. Foreign roofing stock also has sold freely. Importers report mills paying 1.50 cents a pound ex dock New York for dark colored cottons on the spot, and 1.60 cents for linsey garments. There has been some demand for rags for forward shipment from European sources but manufacturers have been unwilling to pay as much as for spot stocks, thereby indicating that they are in need of supplies and are willing to pay more for rags for quick delivery than in far-off positions.

Old thirds and blues are firming in price, and repacked rags of this description are readily bringing 2.75 and 3 cents a pound at dealers' shipping points, while rough packing has sold at 2.25 cents a pound. Old whites are under good inquiry and are firmly quoted. New cuttings are relatively quiet but dealers are holding stocks with comparative firmness and no important changes in quotations are noted.

PAPER STOCK. — Old paper of practically every kind is on the rise in value, and the market is characterized by more strength than has been noticed in several months. Mills are buying in fairly large amounts, though there is some complaint among dealers of the prices consumers offer, it being asserted by brokers that frequently mills bid figures which are below those they have to pay packers to secure stock. White shavings are very firm and are quoted at around 4.25 cents a pound f.o.b. New York for No. 1 hard, and 3.25 cents for No. 1 soft white shavings, with extra quality packing held at higher prices than these, as for example a sale of soft shavings to a particular paper mill was recorded several days ago at 3.40 cents New York. Book stock also is firm. Most dealers in this city ask at least 1.70 cents a pound f.o.b. New York for No. 1 heavy magazines, and there is but a limited supply to be had at this price basis. Old kraft paper is firmly quoted at about 2.10 cents per pound New York, ledger stock at 2 cents, white blank news at 1.90 cents, and No. 1 print manilas at 1.10 cents. Low grades also are stronger, sales of flat folded newspapers having been noted at 90 cents a hundred pounds, and of No. 1 mixed paper at 80 cents f.o.b. New York.

OLD ROPE AND BAGGING.— Demand from paper mills for old rope continues quiet and prices on this commodity evince a downward trend. No. 1 domestic manila rope is quoted by dealers at 5.75 cents a pound f.o.b. New York, and the probabilities are buyers could get some supply down to 5.50 cents. Old bagging is also quiet and is quoted at 1.15 to 1.25 cents per pound New York for No. 1 scrap burlap, and 80 cents a hundred pounds for roofing bagging.

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PAPER MARKETS IN NORMAL CONDITION

The paper markets of the United States are following a normal trend during the summer months, but already there are evidences of a more early resumption of activity than is customary in the fall, says a bulletin of the American Paper and Pulp Association. There is every indication of an influx of orders to the mills about the first of September, which will result in a renewal of the large scale production which marked the early portion of the year.

The only possible disturbing factor would be an effort by labor to secure advances as soon as the mills are busy with a surplus of orders. Already labor in some districts, receiving far above the pre-war scale, has asked for increases entirely out of proportion to the increases in the cost of living or of the prices of paper. Such unreasonable wage demands might serve to slow down business, but as one important district has voted against a strike, it would appear that the better thought of the labor group is against throttling prosperity by unjustifiable wage demands.

Activity Seen In September

With the labor situation apparently met there is every reason to anticipate that there will be a high volume of business through the balance of the year, and extending well into 1924. As stated before, the indications now are that short stocks will cause the jobbers to begin laying in normal supplies the first of September, instead of waiting until the middle of October, as is often the case. The fine paper mills are even during the summer dullness, which is normal and seasonal, operating with 85 percent of orders, and the same percentage of production.

The revival of activity, it would appear, will be in full swing soon after the first of September, or a month earlier than usual. The book paper demand is already improving. A shortage of ground wood is reported, and there is also a shortage of Scandinavian pulps for export.

Wrapping Mills at Capacity

The Federal Reserve Board has the following to say in connection with the paper situation:

''Newsprint production and shipments, after a drop in April, rose in May to the highest figures for any month on record. Stocks on hand increased slightly, but were still unusually low. Seasonal increases also occurred in production, consumption, and stocks of wood pulp during May, and likewise for the principal kinds of paper other than newsprint. They were also larger than during last May. Reports from the Philadelphia and Cleveland reserved districts indicate a slight slackening in the demand for many grades of paper during May and June. This is largely seasonal and the demand is generally still fairly satisfactory. Some manufacturers have curtailed production, but most book-paper and wrapping-paper plants are running at capacity. Wholesalers report that sales have fallen off since March. Contract prices have remained practically unchanged.''

Optimism is expressed in the special paper industry summaries of the Federal Reserve Banks for Philadelphia and Cleveland, while the Boston reserve bank review tells of one large organization which is operating 5 percent above the normal rate for this season.

The Bible promises no loaves to the loafer.

Wood Pulp Trading Co., Ltd.

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OF CANADA

A Weekly Magazine Devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades

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:-: EDITORIAL :-:

THE EMBARGO WILL INSPIRE PROTECTION OF FORESTS

Probably no other issue could have so rapidly and vigorously concentrated attention by the public on the serious forest situation on this continent as has the discussion of an embargo on all pulpwood cut on Canadian soil. The forest is, directly or indirectly, the real tax payer in several provinces of the Dominion. We can not see how our governmental expenses can be met, except every stick of timber be carefully guarded and eventually manufactured in Canada. Canada needs the taxes on every taxable property and income, and our industries, so largely based on the forest must not be allowed to become idle for want of raw material.

There are some men in Canada who are not convinced of the dire necessity of applying severe measures to protect the life of our wood using industries. Mr. Angus McLean, for instance, thinks the situation does not warrant the placing of an embargo, even though his own company would benefit. He takes a very generous attitude, which, however, if generally indulged in, would send many of his compatriots seeking work in a foreign land when their factories are closed for want of wood. There used to be an expression in the States, at the time of the Philippine occupation. "The Constitution follows the flag." Applying that to many Canadian localities, we may say "The population follows the wood." If we want our population to stay in Canada, we must keep the wood here to provide them employment. Every possible measure of protection must be taken.

The following extract from a letter written by Mr. F. J. D. Barnjum to the Editor of The Paper Mill, New York, indicates the urgent need for action and the eventual benefit of stringent measures in Canada to the forest lands and policies in the United States.

> "Since the national disaster which overtook Canada in the destruction of 200,000,000 cords of standing pulpwood by the spruce bud worm, I have been unalterably opposed to the export of wood, as from personal examination I then became convinced that Canada had but a very small remaining supply for her own industries, and this supply is now being diminished yearly at an alarming rate through forest fires, beetles, wind and over-cutting.
>
> "If no other result were obtained than my being the cause of the formation of the U. S. National Committee, composed of sixty-five members and some of the very brightest minds in the United States, (many of whom are my personal friends), with the main purpose in view of perpetuating the pulpwood forests in the United States, I should feel that I had been more than amply rewarded for the three strenuous years and the large amount of money that I have devoted to this campaign, for I think up to the time I began my agitation, the people of both the United States and Canada were pretty thoroughly asleep with regard to the alarming forest situation facing this continent. This situation, through my persistent efforts, has finally been forced on their attention, and I have no hesitation in saying that within a year or two, the timely warnings issued by me will be looked upon with keen gratitude by pulp and paper industries of both countries. Instead of spending any of the time, brains and money of this National Committee in the impossible proposition of opposing the embargo and in trying to see how much longer the United States can continue to rob their simple neighbor of the North of their meagre and rapidly diminishing wood supply, how much more manly, dignified and wise it would be to devote this same time and money and effort to devising ways and means for the protection and increase of the home supply.
>
> "The United States may be, and undoubtedly is, in a deplorable condition with regard to its forests, but she is at least not exporting unmanufactured pulpwood, while Canada, which is in a far worse plight with regard to a wood supply, is still expected freely to export hers. I want to forewarn all of my good friends in the United States that this embargo on pulpwood out of Canada is going to be put into force, and that in the very near future, and there is no power on earth that can now prevent it. Any government in Canada which would now undertake to temporize with the critical forest situation here would be swept out of power in short order and without ceremony."

The American Paper and Pulp Industry has organized a very capable committee under the able leadership of Henry W. Stokes, President of the American Paper and Pulp Association. Mr. Stokes ably guided the effort of the committee of the same Association which for a number of years past has had in hand the activities of the American Association with regard to tariff matters.

In a very carefully worded letter to the Secretary of the State at Washington, the committee reviews the history of Provincial restrictions on the use of pulpwood cut on Crown land, the growth of the Canadian Pulp & Paper Industry, and closes with a number of reasons why the Department of State should intervene in behalf of the American Pulp and Paper Industry.

The core of the whole argument seems to be in the paragraph which reads. "**More than a million cords a year would be added to the annual drain on our own fast diminishing resources.**"

This statement is one of the strongest arguments that could have been advanced for the embargo, as it indicates that by taking such a measure, more than a million cords a year will be added to the wood supply available to Canadian pulp and paper mills.

The statement by Mr. Stokes that the price of pulpwood would increase and that this increased cost would result in an increased price of newsprint of at least $10 per ton indicates in turn that Canadian mills would have a sufficiently increased income to enable them to begin immediately the practising of sensible scientific forestry on a scale which will insure the perpetuation of this necessary supply of raw material. This, of course, is only assuming that the transfer of cutting operations from Canadian forests to American timberlands, which involves but 20% of the total United States consumption of pulpwood, only a part of which is involved in newsprint manufacture, is seized upon as an opportunity for advancing the cost of this commodity over the whole industry.

We fear that the American committee is projecting a relatively small but disproportionately important factor in their industry upon a very large screen and showing the difficulty with regard to the supply of 20% of their pulpwood requirements against a background which takes in the whole pulp and paper manufacturing industry together with all of the conversion plants, such as manufacturers of wall-paper, paper containers, stationery, etc., and the publishers of newspapers and magazines. There is no question but what all of these industries will, to some extent, be affected, but it is ridiculous to intimate that they will be ruined.

It will be interesting to learn, perhaps through the activities of Mr. Stokes' committee, what mills are affected by any steps along the lines made possible by the embargo resolution. We are under the impression that not over one-half, possibly not more than one-third of the pulpwood exported is used in newsprint manufacture, and we are under the impression that close to 75% of this exported pulpwood goes to mills that own or have access to some sources of domestic supply. It is doubtless true that even these concerns which have some timberlands, do not have sufficient for their needs, and many mills are entirely without a controlled supply of pulpwood and are dependent upon getting it where they can find it.

But why should the fact that pulp mills elsewhere are not taking measures for the perpetuation of their domestic supply deter Canada from taking necessary measures for protecting the life of her wood using industries? The plight of United States mills seems an argument for such measures rather than against.

The statement that Canadian newsprint mills will be able to monopolize United States markets at their own price is ridiculous. In the first place, the prices in the United States market are made in New York and not in Canada, and may eventually be made on the Pacific Coast or in Alaska. In the second place, it is not a question of monopolizing the market, but of so conserving the wood supply on the continent that the paper mills in both countries may be assured of continued operation, and an adequate supply of newsprint for the present and evergrowing demand for this commodity. In the third place, the wood using industries of Canada will soon reach, if they have not already passed, the economic limits of expansion based on presently available or remotely visible supplies of raw material. The American manufacturers need have no fear whatever of their elimination by competition of Canadian mills. As a matter of fact, there is probably less competition in this branch of the industry than in any other part of it. As stated previously, it is principally a question of being able to supply the demand. The only thing that will eliminate American newsprint mills is their failure to grow or conserve their own wood, and that very same thing applies to Canadian mills.

A serious crisis faces the whole industry, and every mill which dares look the forest in the face has every reason to be alarmed at the prospect and every need to tighten their belt and **start real conservation measures right now.**

POLITICAL TROUBLE IN NEWFOUNDLAND

A political event of considerable importance, but which may or may not have any effect on the plans for development of the pulp and paper and power proposition at the mouth of the Humber River is the recent resignation of Premier Squire.

There have been rumors of irregularity in connection with the administration of certain departments, and despatches from St. John's indicate that there is some connection between them and the resignation of the Premier and several members of his cabinet. Mr. Warren, a member of the old cabinet has assumed the leadership of the Government. The Squire Government, or at least the party to which the ex-premier belongs continues in power, and it will be recalled that in the recent election, the principal issue was whether or not the Newfoundland Government would guarantee principal and interest of $9,000,000 securities for the establishment of industries on the Humber River. The principal immediate development was to be the erection of a large pulp and paper mill for which it is understood construction work has already begun. With the present government party behind this movement, it would hardly seem likely that any change in that plan would result from the resignation of Premier Squire. The party still has a very comfortable majority and a new election has not been suggested.

The Pulp and Paper Magazine has a limited number of copies of Major Marx's translation of Dr. Sigurd Smith's excellent recent book "The Action of the Beater." — $3.60 post paid.

STEAM ACCUMULATORS

By M. EMANAUD

(Translated from "La Technique Moderne", vv. 193-197 (April 1, 1923) and 237-241 (April 15, 1923) by A. Papineau Couture)

The operation of a boiler consists in maintaining the steam pressure at a value which, in most cases, must be kept constant and in ensuring at each instant the formation of an amount of steam equal to that which is used. Equilibrium would be extremely difficult to keep up but for the fact that evaporation of a liquid in a vacuum or when the pressure is appreciably lower than that of the maximum vapor pressure corresponding to its temperature is extremely rapid, and even practically instantaneous.

Consequently, as soon as the pressure inside the boiler is lowered by drawing off a certain amount of steam, there is a rapid evaporation to bring the pressure back to the vapor pressure at the temperature in the boiler. Even if there were no furnace, the pressure would return to a point very near the original pressure, because there is a generation of steam at the expense of a slight decrease in the temperature of the mass, the amount of heat required for the evaporation being absorbed from the heat accumulated in the water and in the boiler itself.

The problem of operating a boiler therefore resolves itself into a question of keeping a constant temperature. This will be accomplished more easily according as the ratio of the amount of heat accumulated in the boiler to the heat removed by the steam used each moment is greater, for the variations in temperature will be smaller. Hence, a large mass of water, massive brickwork, large grates carrying considerable quantities of burning coal, make for easier and more uniform operation. But they have very serious drawbacks: their weight, their size, and especially the increased danger and damage in case of an explosion on account of the large amount of pent up energy which would be instantaneously converted into work.

The history of the evolution of boilers is practically all taken up by the study of the compromises which have been made between these advantages and disadvantages; but on the whole as the unit capacity has been increased there has been a tendency to limit the size of the units and consequently to decrease the size of the grates and increase the rate of combustion, decrease the mass of water, the heating surface, etc. These reductions have been pushed very far in certain cases; but then the equilibrium conditions are adjusted so finely that very little is required to upset the balance. The temperature inside the boiler is no longer uniform, the evaporating surfaces are in contact with a mixture of steam and water in which at times the water may be entirely lacking, separation of the water from the steam does not take place properly, and things go smoothly only as long as conditions do not change at all. This state of affairs is extremely dangerous, for it takes very little to lower the efficiency or even to cause an explosion. It may be sufficient, for instance, to open up a steam valve too suddenly; the pressure in the boiler falls, equilibrium conditions are upset, and, as we have seen, there is a rapid generation of steam tending to restore equilibrium. But this evaporation does not take place only at the heating surface as under normal conditions, but also at the free surface and at all the metal surfaces, even those which are not heated directly. Moreover, very large bubbles of steam are formed and the normal circulation of water and steam in the boiler may be entirely upset.

In order to obtain smooth and regular working when the calorific capacity of the boiler is small, it is necessary to have continuous and regular operating conditions. As a matter of fact, proper working of the control apparatus presupposes this constancy of conditions: such is the case, for instance, for CO_2 recorders, and especially for water-level gauges which are usually considered as being based on hydrostatic principles and would therefore require that the fluids inside the boiler be in a state of equilibrium. Variations in the load are always difficult to handle, and it would be highly desirable that they be as slow as possible.

In many industries the steam requirements are essentially variable, while on the other hand constant and uniform production is no less essential. It is therefore necessary to have a buffer between the steam generator and the steam-using equipment, and the steam accumulator is such a buffer. A complete installation replacing the old-fashioned boiler should therefore comprise: a fire-box and combustion chamber, a bank of tubes for evaporating the water, a superheater, a feed water heater, an accumulator, and an air preheater. Such a combination is much less dangerous than an old-fashioned boiler of the same capacity, because the accumulator, though it contains a large mass of hot water, is much less liable to explode. Boiler explosions are nearly always due to a failure in the boiler shell, either at a point difficult to construct or owing to the burning of the shell. But the accumulator is not heated directly; and as there is no reason why it should be of a complicated shape it can consist merely of a cylindrical shell with hemispherical ends.

Discharge Curve of a Steam Accumulator

In view of the advantages which we have just described, it would seem as through the steam accumulator should have come into general use long ago. But as a matter of fact, though it was conceived quite a while ago, for a long time it was but little used. This anomaly can be readily explained by studying the discharge curve of an accumulator.

We shall assume that the walls of the accumulator are absolutely impermeable to heat, which can be approximately obtained in practice by proper insulation. Let t_0 be the initial temperature and P_0 the initial weight of water it contains. The accumulator is cut off completely from the boiler, and the steam valve is opened. The temperature drops. At any given moment, let P be the weight of water remaining and t its temperature. In an infinitely small time a weight dP of dry saturated steam will be withdrawn, the temperature will drop by an amount dt, and as, by hypothesis, there is no loss of heat through the walls and the variation of t depends entirely on the evaporation of the weight of water dP, we can write down the equation:

$$Pdt = (606.5 - 0.695t)\ dP \qquad (1)$$

or

$$\frac{dP}{P} = \frac{dt}{606.5 - 0.695t}$$

This follows from the well-known work of Regnault. Integrating between the limits P_0 and P, we have:

$$\frac{LP_0}{P} = \frac{1}{0.695} L \frac{606.5 - 0.695t_0}{606.5 - 0.695t}$$

or

$$\frac{P}{P_0} = \left(\frac{606.5 - 0.695t_0}{606.5 - 0.695t}\right)^{1.44}$$

or finally

$$\frac{P_0}{P} = K\,(606.5 - 0.695t)^{1.44}$$

in which

$$K = \frac{1}{(606.5 - 0.695t_0)^{1.44}}$$

Figure 1 shows the curves obtained by plotting the temperatures as ordinates and the weight of water evaporated in the accumulator (as a fraction of the original weight P_0) as abscissae. Each curve corresponds to a given original temperature t_0.

A mere glance at this diagram shows that the utilization varies within fairly narrow limits: if the accumulator is charged to a pressure of 5 kilos (about 65 pounds per square inch) absolute (equivalent to approximately 4 kilos gauge), corresponding to a temperature of 151°C., on releasing the pressure to that of the atmosphere a little less than one-tenth of the water will be evaporated. Starting with a pressure of 25 kilos absolute (corresponding to about 223°C.), only a little over two-tenths can be evaporated. And these values are maximums owing to the heat losses which are inevitable in spite of the insulation of the shell.

In Fig. 2 we have plotted from the above formulas the weight of water which is required to generate 100 kilos of steam, after cutting off the accumulator from the boiler, when the pressure is allowed to drop from the pressures shown as ordinates to the pressures shown as abscissae. It is readily seen that the weight increases quite rapidly within practical pressure limits.

Finally, Fig. 3 shows the kilos of steam (as ordinates) furnished by 1,000 kilos of water when the pressure in the accumulator falls 1 kilo below the initial pressure.

Consequently, if we consider the steam accumulator from the standpoint of a hot water reservoir, it is very bulky and can be used only within rather narrow limits. And yet, its use is imperative in certain cases, and its usefulness is daily gaining greater recognition. This is due to a factor which we have not taken into consideration in the preceding discussion, namely, "time." The above calculations do not involve time, as the production of steam is extremely rapid and the rate of discharge is a function only of the drop in pressure caused by drawing off steam. There is no limit to the rate of production of the steam, which could even be made to proceed at an explosive rate. The time taken to discharge the accumulator does not affect the above figures, and it is precisely the very great rapidity with which it can meet variations in the demand for steam which has made possible its many interesting applications. This is its characteristic quality which justifies its use as a thermal fly-wheel.

The reverse phenomenon, condensation in the accumulator of steam from a boiler or from the exhaust of a

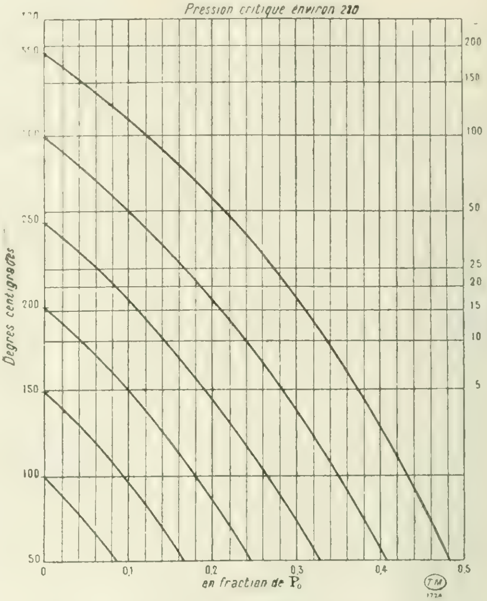

Fig. 1. — Diagramme de la décharge de l'accumulateur.

Fig. 1. — Curve of the discharge of an accumulator at various temperatures

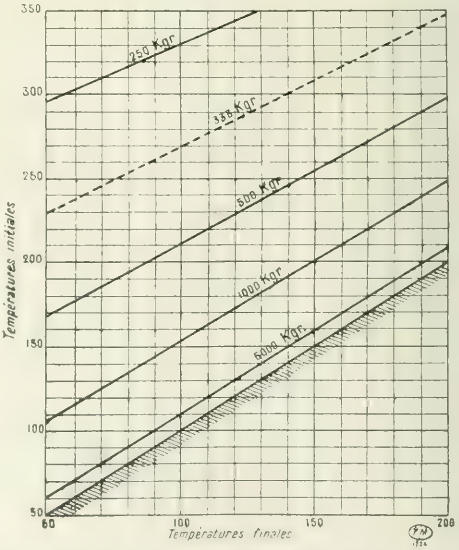

Fig. 2. — Poids de l'accumulateur capable de 100 kg de vapeur.

Fig. 2. — Weight of water required to give 100 kilos of steam in an accumulator

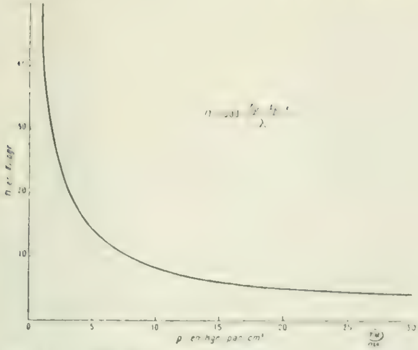

Fig. 3. — Poids de vapeur produit par un accumulateur de 1 000 kg pour un abaissement de pression de p à $p - 1$.

Fig. 3. — Weight of steam produced by an accumulator of 1,000 kilos when the pressure falls from p to p — 1

machine, also takes place rapidly, but much less so than evaporation. Evaporation takes place at the free surface of the liquid, and also, by boiling, at all metal surfaces in contact with water. Condensation, on the other hand, occurs only at the free surface and at the points at which the steam enters the water, which points are necessarily limited in number and must be distributed as evenly as possible throughout the mass of water. The condensing surface is always much smaller than the evaporating surface.

But on the other hand condensation would soon stop if the heat brought by the steam was not evenly distributed in the accumulator. There is no trouble on this score during evaporation, as the bubbles which form at the metal surface ensure thorough agitation and exchange of temperature in rising to the surface. While charging the accumulator the heat is imparted by conduction and is distributed only by convection currents originating at the points at which the steam enters; and these methods are much less efficient, especially when the accumulator has not been carefully designed with a view to obtaining an even temperature distribution. If the steam were merely led in over the free surface of the water the upper layers of water would heat up, but no convection currents would set in and a considerable increase in pressure would be required to condense the steam.

Such a difference in pressure between the steam generator and the accumulator is always necessary; it is the price paid for the services rendered by the latter. It has a bearing on the time required for charging the accumulator; so that the factor "time", which we found to have no appreciable influence on the rate of discharge, acquires considerable importance in the reverse process, and consequently affects the operating cost.

We shall examine the various devices and means adopted by inventors for ensuring uniform temperature distribution during charging. We may incidentally mention that all the means used by boiler manufacturers for obtaining proper circulation in boilers can also be used here. In practice, the rate of discharge comes into play as a factor owing to losses of heat through the shell and losses due, in certain case, to variations in the pressure of the steam supplied to the accumulator.

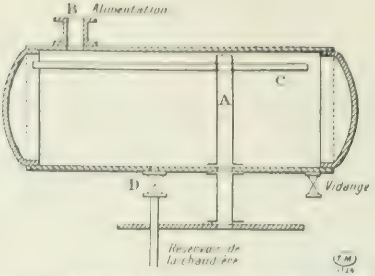

Fig. 4 — Dispositif d accumulateurs système Halpin de la « Société d'éclairage électrique », de Kensington.

Fig. 4. — Halpin Accumulator used at the Kensington Electric Lighting Company

Alimentation	Feed
Vidange	Blow off
Réservoir de la chaudière	Body of the boiler

Different Types of Accumulators

Halpin Accumulator — As early as 1892 Halpin accumulators were in use in England (Fig. 4). It is essentially a separate water reservoir, mounted directly over a Babcock and Wilcox boiler, but connected to it in a rather peculiar manner. The steam from the boiler is fed into the accumulator at A, while cold water in the form of a spray is fed in at B, heats up in contact with the steam, and drops in the drain C. When the demand for steam is low, water is fed continuously at B, the valve D being shut. The water level in the accumulator rises, and water is stored at the pressure of the boiler. The latter is fed with hot water from the accumulator. If the demand for steam rises above the production of the boiler, the cold water feed is cut off and the boiler is fed with the water in the accumulator, which is at the temperature of evaporation. The rate of production of steam is thus increased without any increase in the rate of burning of the fuel.

Seven Babcock and Wilcox boilers, each equipped with an accumulator 1.50 meters in diameter and 6.60 meters long and capable of containing 9,500 kilos of water, which filled up especially during the night, allowed the Kensington Electric Lighting Co. to take care of the daily peak in the load without increasing the number of boilers.

This apparatus is really a combination of an accumulator and a feed-water heater and purifier.

Fireless Locomotives — We can mention in this connection the boilers of the fireless locomotives which for quite a while, about 1900, ran between Saint-Germain-en-Laye and Poissy. They were really nothing more nor less than accumulators, which were charged at Poissy by means of a stationary boiler, and which made the trip to Saint-Germain-en-Laye and back without recharging. Such boilers are still used in certain special cases.

Rateau Accumulator — Rateau, who in 1902 installed an accumulator at the Bruay mines, worked along entirely diferent lines. The purpose of his apparatus was to receive the exhaust from an extracting machine, which ran intermittently for a few minutes at a time, and to regenerate it for continuously supplying a low pressure turbine driving a 300 horsepower machine. The extractor originally used 6,400 kilos of steam per hour, and exhausted into the atmos-

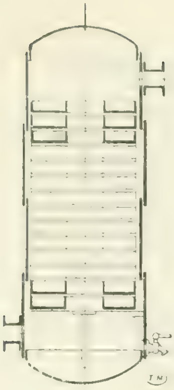

Fig. 5. — Elément d'accumulateur système Rateau aux mines de Bruay

Fig. 5. — Unit of Rateau accumulator at the Bruay mines

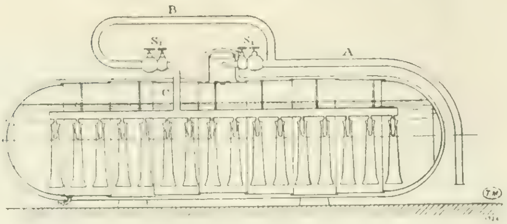

Fig. 6. — Dispositif des accumulateurs système Rateau des mines de Béthune.

Fig. 6. — Rateau accumulator at the Béthune mines

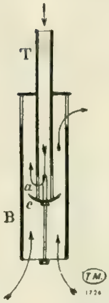

Fig. 7. — Dispositif du mélangeur système Rateau.

Fig. 7. — Mixer for the Rateau accumulator

phere. The turbine used this steam between pressure of 0.90 and 0.15 kilos (about 12 and 2 lbs. per square inch, respectively), with maximum variations of 0.25 kilo in the accumulator and corresponding temperature variations of 3 to 6° C.

The accumulator consisted of four identical sections each of which was a vertical cylindrical shell (Fig. 5) of boiler plate, containing a series of superposed annular cast iron troughs which were full of water. The total weight of cast iron was 40 tons. The idea of this construction was to ensure a sufficient calorific capacity and a large contact surface for the steam with the water or the iron in the accumulator. The steam circulated between the shell and the troughs, in the central space, and around the various troughs, thus ensuring a uniform temperature distribution.

The following accessories were also provided:

1) An automatic valve allowing the extractor to exhaust into the atmosphere in case the turbine was stopped or working under a light load;

2) An automatic pressure reducer, allowing the turbine to be run directly on live steam when the pressure fell too low in the accumulator.

3) An automatic blow-off to remove the excess water entrained by the steam.

In view of the success of this installation, several other forms were studied, and a new type was installed at the Bethune mines, in which the cast iron was entirely eliminated. The accumulator contained only water, which has a maximum calorific capacity and the use of which is particularly advantageous as it costs nothing.

The apparatus (Fig. 6) is a cylindrical horizontal shell, about two-thirds full and containing approximately 10 cubic meters of water. In order to ensure thorough and even distribution of the heat of the steam, the latter is admitted through A, below the water level, into four flattened cylinders C, the vertical walls of which are perforated with numerous holes. On escaping through these holes the steam condensed and caused violent agitation in the spaces between the cylinders C. A check-valve prevented the water from backing up into the machine. The accumulators received 4,500 kilos of steam an hour, at two minute intervals.

It will be noted that in both these types considerable attention was given to the devices allowing the accumulator to absorb "rapidly" large quantities of heat, and they clearly show the two solutions possible: subdividing the mass of water into numerous thin films, or causing intense circulation in the mass of water.

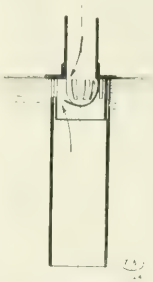

Fig. 8. — Dispositif du mélangeur système Morison.

Fig. 8. — Mixer for the Morison accumulator

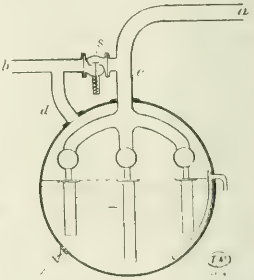

Fig. 9. Coupe transversale d'un accumulateur système Morison.

Fig. 9. — Cross section of a Morison accumulator

In the later accumulator designed by Rateau he used the mixer shown in Fig. 7. The steam enters through pipe T, below the level of the water, impinges on c, which reflects upwards the steam and condensed water which go out through the orifices a. This causes an upwards current in the cylinder B, which is entirely submerged, and causes a general circulation throughout the mass of water.

Morison Accumulator — Fig. 8 shows the mixers used in the Morison accumulators, of which Fig. 9 is a cross-section. The steam comes through a, and owing to the automatic valve s is sent either directly to the low pressure turbine through b or to the accumulator through c, whence it goes to the turbine through d. It is seen that the cylinders of the mixers extend practically right down to the bottom of the accumulator.

(To be continued)

Plenty of folks have a good aim in life but **most of them don't pull the trigger.**

American Pulpwoods

The Suitability of Various Species of American Woods for Pulp and Paper Production

By SIDNEY D. WELLS

(Continued from last issue)

LONGLEAF PINE — *Pinus palustris.* Wt. 34 lbs. Fiber 3.7 m.m.

Range — Coast region, from southern Virginia (Norfolk) to Florida (Tampa Bay and Cape Canaveral) to eastern Texas (Trinity River); northward in Alabama to the northeastern part of the state (Clay and Walker counties) and northwestern (border counties) Georgia.

Common Names — Long-leaved pine (Va., N.C., S.C., Ga., Ala., Fla., Miss., La., Tex.); Southern pine (N.C., Ala., Miss., La.); Yellow pine (Del., N.C., S.C., Ala., Fla., La., Tex); Turpentine pine (N.C.); Rosemary pine (N.C.); Brown pine (Tenn.); Hard pine (Ala., Miss., La.); Georgia pine (general, Del); Fat pine (Southern States); Southern yellow pine (general); Southern hard pine (general); Southern heart pine (general); Southern pitch pine (general); Heart pine (N.C. and South Atlantic region); Pitch pine (Atlantic region); Longleaved yellow pine (Atlantic region); Longleaved pine (general); Heart pine (N.C. and South Atlantic region); North Carolina pitch pine (Va., N.C); Georgia yellow pine (Atlantic region); Georgia heart pine (general); Georgia longleaved pine (Atlantic region); Georgia pitch pine (Atlantic region); Georgia pitch pine (Atlantic region); Florida yellow pine (Atlantic region); leaved yellow pine (Atlantic region); Long-leaved pine (Atlantic region); Texas yellow pine (Atlantic region); Texas long-leaved pine (Atlantic region).

Sulphite Pulp

Yield — 1,840 lbs. (crude pulp).

Character — Cannot be bleached; Very poor color; In general, this wood cannot be considered satisfactory for sulphite pulp.

Possible uses — Few

Sulphate Pulp

Yield — 1,600 lbs.

Character — Strong, but coarse fiber

Possible uses — Similar to white spruce

MONTEREY PINE — *Pinus radiata.* Wt. 29 lbs. Fiber.

Range — California (Point Pinos on Monterey Bay, and along the cost from Pescadero to San Simeon Bay.)

Common Names — Monterey pine (Cal.); Spreading-cone pine (Cal. lit.); Nearly smooth-cone pine (Cal. lit.); Remarkable pine (Cal. lit.); Small-coned Monterey pine (Cal. lit.); Two-leaved Insular pine.[3]

Sulphite Pulp

Yield — 1,260 lbs.

Character — Easily pulped; Difficult to bleach; Good color, Fair strength.

Possible uses — As a substitute for white spruce

Sulphate Pulp

Character — Easily pulped; Difficult to bleach; Good strength.

Possible uses — Similar to white spruce.

NORWAY PINE — *Pinus resinosa.* Wt. 27 lbs. Fiber 3.7 m.m.

Range — From Newfoundland and along the northern shores of St. Lawrence Gulf to northern Ontario (north of Abitibi Lake) to southern Manitoba (near southern end of Lake Winnipeg); southward through the Northern States to Massachusetts (Middlesex County, Pennsylvania (Chester County), northeastern Ohio (north of Cleveland) central Michigan (Saginaw), northern Wisconsin (Oshkosh and Eau Claire), and northeastern Minnesota.

Common Names — Red Pine (Vt., N.H., N.Y., Wis., Minn., Ont.); Norway pine (Me., N.H., Vt., Mass., N.Y., Wis., Minn., Ont.); Hard pine (Wis.); Canadian red pine (Eng.).

Sulphite Pulp

Yield 1,230 lbs.

Character — Difficult to pulp and bleach; Poor strength.

Possible uses — Few.

Sulphate Pulp.

Yield — 1,350 lbs.

Character — Fairly easily bleached.

Possible uses — Similar to white spruce.

Mechanical Pulp.

Because of high pitch content is probably unsuitable for this purpose.

PITCH PINE — *Pinus rigida.* Wt. 29 lbs. Fiber

Range — From southern New Brunswick (St. Johns river) to eastern Ontario (north shore of Lake Ontario and lower Ottawa river) and southward in the Atlantic region to southern Virginia (Norfolk) and along the mountains to northern Georgia (Atlanta); west to western New York (Ithaca), northeastern Pennsylvania, eastern Ohio (border counties south of Canton) and Kentucky, eastern Tennessee (to Cumberland Mountains).

Common Names — Pitch pine (Vt., N.H., Mass., R. I., Conn., N.Y., N.J., Pa., Del., W.Va., N.C., S.C., Ga.. Ohio, Ont., Md., Eng.); Longleaved pine (Del.); Longschat pine (Del.); Black Norway pine (N.Y.); Hard pine (Mass.); Yellow pine (Pa.); Black pine (N.C.); Rigid pine (Eng. lit.); Sap pine (lit.)

Sulphite Pulp.

Yield — 1,250 lbs.

Character — Difficult to pulp and bleach; Poor strength — pitchy.

Possible uses — Few.

Sulphate Pulp.

Yield — 1,430 lbs.

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[3] Refers to the two-leafed form *Pinus radiata binnata* (Engelm.) Lemm., found on Santa Rosa, Santa Cruz, and Guadaloupe Islands.

Character — Fairly easily bleached.
Possible uses — Similar to white spruce.

Mechanical Pulp.
Because of high pitch content is probably unsuitable for this purpose.

POND PINE — *Pinus scrotina.* Wt. 31 lbs. Fiber

Range — Coast region from North Carolina to Florida (Head of St. Johns River and probably farther south; on the west coast from Pensacola to Citrus County and probably much farther south.) Range imperfectly known.

Common Names — Marsh pine (N.C.); Meadow pine (N.C.); Bond pine (N.C., S.C., Fla., Miss., La.); Leblolly pine (N.C., Fla.); Spruce pine (S.C., Ga.); Bastard pine (S.C., Ga.); Bull pine (S.C., Ga.)

Sulphite Pulp.
Yield — 1,360 lbs.
Character — Fairly easily pulped and bleached; Fair color.
Possible uses — As a substitute for spruce.

Sulphate Pulp
Yield — 1,400 lbs.
Character — Fairly easily bleached; Strong but coarse fiber.
Possible uses Similar to white spruce.

Mechanical Pulp.
Probably the same as Loblolly pine.

SAND PINE — *Pinus clausa.* Wt. 29 lbs. Fiber

Range — Coast of Alabama (Baldwin County) and western Florida (to Pease Creek); east coast of Florida from St. Augustine to Halifax River.

Common Names — Sand pine (Fla., Ala.); Oldfield pine (Fla.); Florida spruce pine (Ala.); Scrub pine (Fla.); Spruce pine (Fla.); Upland spruce pine (Fla.).

Sulphite Pulp.
Yield — 1,300 lbs.
Character — Easily pulped; Difficult to bleach and shivey; Fair strength; Good color.
Possible uses — As a substitute for white spruce.

Sulphate Pulp.
Yield — 1,220 lbs.
Character — Fairly easily bleached.
Possible uses — Similar to white spruce.

Mechanical Pulp.
Because of high pitch content is probably unsuitable for this purpose.

SCOTCH PINE — *Pinus sylvestris.*[4] Wt. 37 lbs. Fiber

Range [4] — Europe and Northern Asia up to 700 ft. above sea level in the far north; 6,500 ft. in Southern Europe.

Common Names [4] — Scots (Scotland), Scotch fir (England), Northern pine (general).

Sulphite Pulp.
Yield — 1,600 lbs.
Character — Difficult to pulp and bleach; Poor strength and pitchy.
Possible uses — Few.

Sulphate Pulp.
Yield — 1,600 lbs.
Character — Fairly easily bleached; Strong, tough fiber.
Possible uses — Similar to white spruce.

Mechanical Pulp.
Because of pitch content is probably unsuitable for this purpose.

SCRUB PINE — *Pinus virginiana.* Wt. 26 lbs. Fiber 2.8 m.m.

Range — From New York (Staten Island) to South South Carolina (Aiken River) and northern Alabama (Winston, Cullmaak, and Dekalb counties); west into southern Indiana, to middle Tennessee (Putnam County).

Common Names — Jersey pine (N.J., Pa., Del., N.C., S.C.); Scrub pine (R.I., N.Y., Pa., Del., N.C., S.C., Ohio); Short Shucks (Md., Va.); Shortshat Pine (Del.); Spruce pine (N.J., N.C.); Shortleaved (N.C.); Cedar pine (N.C.); River pine (N.C..); Nigger pine Tenn.); New Jersey pine (lit.).

Sulphite Pulp.
Yield — 1,000 lbs.
Character — Easily pulped; Difficult to bleach; Good color.
Possible uses — As a substitute for spruce.

Sulphate Pulp.
Yield — 1,250 lbs.
Character — Fairly easily bleached; Strong, but coarse fiber.
Possible uses — Similar to white spruce.

Mechanical Pulp.
Similar to Loblolly pine.

SHORTLEAF PINE — *Pinus echinata* — Wt. 31 lbs. Fiber 3.7 m.m.

Range — From New York (Staten Island) to Florida (Chattahoochee region) and west to southern Missouri, eastern Oklahoma, and northeastern Texas.

Common Names — Yellow pine (N.Y., N.J., Pa., Del., Va., N.C,. Ala., Miss., La., Ark., Mo., Ill., Ind., Kans., (scarce), Ohio, (Eng. lit.); Shortleaved pine (N.C., S.C., Ga., Ala., Miss., Fla., La., Tex., Ark.); Spruce pine (Del. Miss., Ark.); Bull pine (Va.); shortshat pine (Del.); Pitch pine (Mo.); Poor pine (Fla.); Shortleaved yellow pine; Rosemary Pine (N.C.); Virginia Yellow pine (Va. in part); North Carolina pine (N.C. and Va. in part); Carolina pine (N.C. and Va. in part); Slash pine (N.C., Va., in part); Oldfield pine (Ala., Miss.).

Sulphite Pulp.
Yield — 1,500 lbs.
Character — Difficult to pulp and bleach; Pitchy.
Possible uses — Few.

Sulphate Pulp.
Yield — 1,450 lbs.
Character — Fairly easily bleached; Strong, but coarse fiber.
Possible uses — Similar to white spruce.

Mechanical Pulp.
Because of pitch content is probably unsuitable for this purpose.

SLASH PINE — *Pinus heterophylla.* Wt. 37 lbs. Fiber

Range — Coast region (60 to 100 miles inland), from South Carolina (Charleston) to southern Florida (Cape Canaveral and Biscayne Bay) and west to Louisiana (Pearl River.)

Common Names — Slash pine (Ala., Miss., Ga., Fla.); Swamp pine (Fla., Miss., Ala., in part); Bastard pine (Ala. lumbermen, Fla.); Meadow pine (Fla., eastern Miss., in part), Pitch pine (Fla.), She pitch pine (Ga.), She pine (Ga., Fla.), Spruce pine (southern Ala.)

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[4] From English data.

Sulphite Pulp.
Because of high pitch content is probably unsuitable for this purpose.

Sulphate Pulp.
Yield — 1,650 lbs.
Character — Fairly easily bleached; Strong, but coarse fiber.
Possible uses — Similar to white spruce.

Mechanical Pulp.
Because of high pitch content is probably unsuitable for this purpose.

WESTERN YELLOW Pine — *Pinus ponderosa.* Wt. 24 lbs. Fiber 3.6 m.m.

Range — From British Columbia (interior south of latitude 51°), and Dakota (Black Hills region), southward in the Pacific and Rocky Mountain region to western Texas and Mexico.

Common Names — Yellow pine (Cal., Colo., Mont., Idaho, Utah, Wash., Oreg.); Bull pine (Cal., Wash., Utah, Idaho, Oreg.); Big pine (Mont.); Longleaved pine (Utah, Nev.); Red pine; Pitch pine; Southern yellow pine; Heavy-wooded pine; (Eng.); Western pitch pine; Heavy pine (Cal.); Foot-hills Yellow pine; Sierra Brownbark pine; Montana Black pine (Cal. lit.); "Gambier Parry's pine" (Eng. lit.).

Sulphite Pulp.
Yield — 1,130 lbs.
Character — Not difficult to pulp; Difficult to bleach, shivey; Very poor strength and color.
Possible uses — Few.

Sulphate Pulp.
Yield — 1,100 lbs.
Character — Fairly easily bleached; Fine, high grade, very strong, and tough fiber.
Possible uses — Same as white spruce.

Mechanical Pulp.
Yield — 2,060 lbs.
Character — Fibers are long, coarse and soft, creamy color and somewhat pitchy.
Possible uses — Where a medium quality of groundwood will answer the purpose.

THE FIRS

ALPINE FIR — *Abies lasiocarpa.* Wt. 21 lbs. Fiber

Range — Rocky Mountain region from Colorado to Montana and Idaho, and westward through northern Oregon and northward to Alaska (latitude 60 degrees.)

Common Names — Sub-Alpine fir (Utah); Balsam (Colo., Utah, Idaho, Oreg.); White fir (Idaho, Mont.); White balsam; Oregon Balsam-tree (Cal.); Pumpkin-tree; Alpine fir; Mountain balsam (mountains of Utah and Idaho); Down-cone Fir (lit.); Downy-cone Sub-Alpine fir (Cal. lit.).

Sulphite Pulp.
Yield — 1,010 lbs.
Character — Easily pulped; Easily bleached; Good strength; Excellent color.
Possible uses — As a substitute for white spruce.

Sulphate Pulp.
Yield — 1,050 lbs.
Character — Excellent strength, Long fiber.
Possible uses — Same as white spruce.

Mechanical Pulp.
Yield — 2,070 lbs.
Character — Fair strength, White fiber.
Possible uses — Same as white spruce.

BALSAM FIR — *Abies balsamea.* Wt. 21 lbs. Fiber 2.7 m.m.

Range — From Newfoundland and Labrador to Hudson Bay and northwestward to Great Bear Lake region, and south to Pennsylvania (and along high mountains to Virginia), Michigan and Minnesota.

Common Names — Balsam fir (N.H., Vt., Mass., R.I., N.Y., Pa., W. Va., Wis., Mich., Minn., Nebr., Ohio, Ont., Eng. cult.); Balsam (Vt., N.H., N.Y.); Canada balsam (N.C.); Balm of Gilead (Del.); Balm of Gilead fir (N.Y., Pa.); Blister pine (W. Va.); Fir pine (W. Va.); Firtree (Vt.); Single spruce (N. Bruns. to Hudson Bay), Silver pine (Hudson Bay); Sapin (Quebec); Cho-koh-tung "Blisters" (N. Y. Indians).

Sulphite Pulp.
Yield — 970 lbs.
Character — Easily pulped; Easily bleached; Good strength; Excellent color.
Possible uses — As a substitute for white spruce.

Sulphate Pulp.
Yield — 1,010 lbs.
Character — High-grade kraft fiber.
Possible uses — Same as white spruce.

Mechanical Pulp.
Yield — 1,910 lbs.
Character — Strong and good color; Good fiber length.
Possible uses — Same as white spruce.

LOWLAND WHITE FIR — *Abies grandis.* Wt. 23 lbs. Fiber 3.2 m.m.

Range — Coast region from Vancouver Island to California (Mendocino County), and from Washington and Oregon to Northern Idaho and Montana.

Common Names — White fir (Cal., Oreg., Idaho); Silver fir (Mont., Idaho); Yellow fir (Mont., Idaho); Oregon white fir (Cal.); Western white fir; Grand or Oregon white fir (Cal. lit.); Great California fir (lit.).

Sulphite Pulp.
Yield — 980 lbs.
Character — Easily pulped; Easily bleached; Fair strength; Excellent color.
Possible uses — As a substitute for white spruce.

Sulphate Pulp.
Yield — 1,140 lbs.
Character — Good strong grade of kraft pulp.
Possible uses — Same as white spruce.

Mechanical Pulp.
Yield — 1,950 lbs.
Character — Good strength, color and fiber.
Possible uses — Same as white spruce.

NOBLE FIR — *Abies nobilis.* Wt. 22 lbs. Fiber

Range — Washington (coast mountains in southwestern part of state; Olympic Mountains on Solduc River; from Mount Baker Southward in the

Cascade Mountains) to Oregon (Browder Ridge on head waters of McKinzie river in Lane County). Range at present but little known.

Common Names — Red fir (Oreg.); "Larch" (Oreg. lumbermen); Noble fir (Oreg.); Big tree; Feather red fir (Cal. lit.); Noble or Bracted red fir (Cal. lit.); Tuck Tuck (Pacific Indians).

Sulphite Pulp.
Yield — 1,010 lbs.
Character — Easily pulped; Easily bleached; Fair strength; Excellent color.
Possible uses — As a substitute for white spruce.

Sulphate Pulp.
Yield — 1,080 lbs.
Character — Good quality of strong pulp.
Possible uses — As a substitute for white spruce.

Mechanical Pulp.
Yield — 1,920 lbs.
Character — Good color; Very long strong fiber.
Possible uses — Same as white spruce.

RED FIR — *Abies magnifica.* Wt. 23 lbs. Fiber . . . . .

Range — Southern Oregon (Cascade Mts.) and California (Mount Shasta and along the western slopes of Sierra Nevada Mountains.)

Common Names — Red fir (Cal.); California Redbark fir (Cal.); Magnificent fir (Cal. lit.); California red fir (Cal. lit.); Golden fir (Cal. lit.).

Sulphite Pulp.
Yield — 1,080 lbs.
Character — Easily pulped; A little hard to bleach; Good strength; Fair color.
Possible uses — As a substitute for white spruce.

Sulphate Pulp.
Yield — 1,150 lbs.
Character — Good strong fiber.
Possible uses — Same as white spruce.

Mechanical Pulp.
Yield — 1,915 lbs.
Character — Fair strength; Pinkish color.
Possible uses — As a substitute for white spruce.

SILVER FIR — *Abies amabilis.* Wt. 22 lbs. Fiber

Range — From British Columbia (Fraser river and southward in the Cascade mountains) to Washington and Oregon.

Common Names — Red fir; Red silver fir (Western mountains) Fir (Cal.); Lovely fir (Cal. lit.); Lovely red fir (Cal. lit.); Amabilis or Lovely fir (Cal. lit.); "Larch" (Oreg. Lumbermen.).

Sulphite Pulp.
Yield — 1,060 lbs.
Character — Easily pulped; Easily bleached; Fair strength; Excellent color.
Possible uses — As a substitute for white spruce.

Sulphate Pulp.
Yield — 1,100 lbs.
Character — Excellent strength; Long fiber.
Possible uses — Same as white spruce.

Mechanical Pulp.
Yield — 1,870 lbs.
Character — Long fiber of excellent strength; Color slightly grayish.
Possible uses — Same as white spruce.

WHITE FIR — *Abies concolor.* Wt. 22 lbs. Fiber 3.5 m.m.

Range — Oregon (Siskiyou mountains to southern California (San Bernadino County); Northern Arizona and New Mexico to Colorado and Utah (Wasatch mountains).

Common Names — White fir (Cal., Idaho, Utah, Colo.); Balsam fir (Cal. Idaho, Colo.); Silver fir (Cal.); Balsam (Cal.); White Balsam (Utah); Bastard pine (Utah); Balsam-tree (Idaho); Black gum (Utah); California white fir (Cal.); Colorado white fir (Cal. lit.); Concolor silver fir (Eng. lit.).

Sulphite Pulp.
Yield — 950 lbs.
Character — Easily pulped; Easily bleached; Good strength; Good color.
Possible uses — As a substitute for white spruce.

Sulphate Pulp.
Yield — 1,100 lbs.
Character — Good strong grade of kraft pulp.
Possible uses — Same as white spruce.

Mechanical Pulp.
Yield — 2,010 lbs.
Character — Fair strength; Good fiber; Satisfactory color.
Possible uses — Same as white spruce.

DOUGLAS FIR — *Pseudotsuga taxifolia.*
Washington and Oregon, Wt. 28 lbs. Fiber 4.4 m.m. Montana and Wyoming, Wt. 25 lbs. Fiber—

Range — From the Rocky Mountain region (in United States) and northward to central British Columbia; Pacific Coast.

Common Names — Red fir (Oreg., Wash., Idaho, Utah, Mont., Colo.); Douglas Spruce (Cal., Colo., Mont.); Douglas fir (Utah, Oreg., Colo.); Yellow fir (Oreg., Mont., Idaho, Wash.); Spruce (Mont.); Fir (Mont.); Oregon pine (Cal., Wash., Oreg.); Red pine (Utah, Idaho, Colo.); Puget Sound pine (Wash.); Douglas-tree; Cork-barked Douglas spruce.

Sulphite Pulp.
Yield — 1,200 lbs.
Character — Hard to pulp; Difficult to bleach; Fair strength; Poor color; Pitchy.
Possible uses — Few.

Sulphate Pulp.
Yield — 1,170 lbs.
Character — Good grade of kraft pulp but not as strong as white spruce.
Possible uses — Similar to white spruce.

Mechanical Pulp.
Because of high pitch content is probably unsuitable for this purpose.

(To be continued)

WILL DEAL IN PULPWOOD

The Atlantic Pulpwood Co., Ltd., was recently incorporated under the Companies' Act of the province of New Brunswick, for the purpose of carrying on business in pulpwood and timber lines.

The company proposes to handle cargo as well as rail shipment wood, and has its head office in St. John and a branch office at Annapolis Royal.

Woodlands Section

The Tour of the Foresters

The visiting foresters from every continent, attending the British Empire Forestry Conference are beginning to realize that Canada is a large place. They have been constantly on the move since July 25 and have not yet seen all of Quebec and New Brunswick. The Prairie Provinces, Ontario, and British Columbia are yet to be visited.

The Conference opened in Ottawa on July 25, with an address of welcome from the Premier and a message of commendation and inspiration from the Prince of Wales. The next day the party went to Montreal, where a committee of the Canadian Pulp & Paper Association arranged for visits to the Trust Products Laboratories, McGill University, Mount Royal Park, and Macdonald College. A complimentary luncheon was served at the Ritz-Carlton Hotel.

Grand-Mere, with its beautiful town site and interesting paper mills and reforestation developments of the Laurentide Company was seen on the 27th. From there the party journeyed in their special train to the Lake St. John country. Here, as guests of Price Bros. & Co. the visitors saw the great power development at Grand Decharge and the paper mills at Kenogami and motored to St. Alphonse to embark on the steamer Richelieu for the beautiful journey down the majestic Saguenay to Quebec. On Monday they went by train to New Brunswick and were met at the border by Premier Veniot. Major-General Lord Lovat, the head of the Conference, and Sir James Calder, C. B. E., indulged in a bit of salmon fishing and succeeded in landing 8 real fish, which supplied the party with breakfast. A stop was made at Campbellton and a banquet was served at Bathurst, where the delegates visited pulp and lumber mills before proceeding to Chatham and Newcastle.

Arrival in St. John was on August 1 in the morning. D. E. Lauderburn of the Pejepscot Pulp and Paper Company of Salmon River. N. B. arranged a trip by automobiles to the headquarters of the company at Salmon River. The special train left St. John August 2, for Quebec City making short stops at Fredericton and Grand Falls.

Friday is to be spent in the interesting and historic city of Quebec, and Saturday at the Provincial nurseries at Berthierville. Saturday afternoon and Sunday are free for the delegates to choose their own programs.

Next week will be spent in Ottawa, with the following general program:

BUSINESS MEETINGS IN OTTAWA

August 6th and 7th

Auditorium: Victoria Memorial Museum

Morning Session

Monday, August 6th —
10.00 a.m.
Procedure.
10.30 a.m
Chairman's address.
11.00 a.m.
Forest Policy — Introductory discussion
12.00 m.—
Resolutions of 1920 Conference: Progress report
12.30 p.m.—
Adjourn for luncheon.

Afternoon Session

2.30 p.m.—
"World's Softwood Supply."
5.00 p.m.—
Debate to be adjourned until August 11th.

Tuesday, August 7th Silviculture.

Morning Session

10.00 a.m.—
Natural Regeneration.
11.30 a.m.—
Artificial Regeneration.
12.30 p.m.—
Adjourn for luncheon.

Afternoon Session

2.30 p.m.—
Artificial Regeneration.
3.00 p.m.
General discussion natural and artificial regeneration.
5.00 p.m.—
Adjourn.

Tour to Petawawa Forest Experiment Station

Tuesday, August 7th—
11.40 p.m.—
Leave Ottawa. Board cars at 10.00 p.m., if desired.

Wednesday, August 8th—
4.40 a.m.—
Arrive Chalk River. Remain in cars till 8.00 a.m. The details for this day will be provided in a separate program. "Sample Plot Methods" will be discussed at an appropriate time. Also a beginning will be made in discussion of "Silvicultural Research and Experiment."
12.50 a.m.—
Leave Chalk River.

Thursday, August 9th—
5.00 a.m.—
Arrive Ottawa. Remain in cars until 7.30 a.m.

Morning Session

10.00 a.m.—
Forest Fire Protection
12.30 p.m.—
Adjourn for luncheon.

Afternoon Session

2.30 p.m.—
Fire Protection.
3.30 p.m.—
Forest Entomology and Pathology.
5.00 p.m.—
Adjourn.

Friday, August 10th

Morning Session

10.00 a.m.—

Trade in forest products.

1.00 p.m.—

The Conference will be entertained at luncheon by the Ottawa Valley lumbermen.

Afternoon Session

2.30 p.m.—

Forest Products Research.

5.00 p.m.—

Adjourn.

Saturday, August 11th—

10.00 a.m.—

"World's Softwood Supply"—the debate will be resumed.

11.15 a.m.—

"Hardwoods."

1.00 p.m.—

Adjourn.

Afternoon to be devoted to entertainment.

7.30 p.m.—

Official Banquet, Chateau Laurier.

LIST OF DELEGATES

Note:—The list of delegates, honorary delegates, and associates, is, through unavoidable circumstances, incomplete. Those whose names are denoted by an asterisk attended the Conference held in London, England, 1920.

United Kingdom—

* Major-General Lord Lovat, K.T., K.C.M.G., D.S.O. &c., Chairman, Forestry Commission.

*Mr. R. L. Robinson, O.B.E., B.A. B.Sc., Commissioner, Forestry Commission.

*Dr. A. W. Borthwick, Forestry Commission.

*Mr. Fraser Story, Forestry Commission.

*Dr. J. W. Munro, Forestry Commission.

*Professor R. S. Troup, C.I.E., Oxford University.

Sir James Calder, C.B.E.

British Empire Forestry Association—

*Lieut.-Colonel G. L. Courthope, M.P., Chairman of the Association.

Australia—

Mr. Owen Jones, B.A., Chairman, Forests Commission of Victoria.

India

Mr. W. A. Robertson, Deputy Conservator, Burma, India.

Mr. C. G. Trevor, Officiating Conservator, United Provinces, India.

Ireland—

*Mr. A. C. Forbes, O.B.E., Forestry Branch, Department of Agriculture, Dublin.

New Zealand—

Captain L. McIntosh Ellis, B.Sc.F., Director of State Forests.

South Africa—

*Mr. C. E. Legat, Chief Conservator of Forests.

Mr. W. S. Johnstone, Associated Chambers of Commerce.

Crown Colonies—

Colonial Office—

Major R. D. Furse, D.S.O., Assistant Private Secretary.

Nigeria.

Mr. J. R. Ainslie, Senior Conservator of Forests.

Kenya.

*Mr. E. Battiscombe, Conservator of Forests.

Ceylon.

Mr R. White, Deputy Conservator of Forests.

Straits Settlements and Federated Malay States—

*Mr. C. E. S. Cubitt, Conservator of Forests.

British Guiana—

Mr. L. S. Hohenkerk, Forest Officer.

Canada—

Dominion—

*Mr. E. H. Finlayson, B.Sc.F., Acting Director of Forestry.

Mr. D. Roy Cameron, B.Sc.F., Dominion Forest Service.

British Columbia—

Mr. P. Z. Caverhill, B.S.F., Chief Forester, Provincial Forest Service.

New Brunswick—

Mr. G. H. Prince, B.S.F., Chief Forester, Provincial Forest Service.

Nova Scotia—

Mr. J. A. Knight, Commissioner of Forests and Game.

Ontario—

Mr. E. J. Zavitz, M.S.F., Provincial Forester.

Quebec—

Mr. G. C. Piché, M.F., Chief of Forest Service.

HONORARY DELEGATES

*Mr. A. Bedard, M.F., Assistant Chief of Forest Service, Quebec, Dean of Laval Forest School.

*Mr. Robson Black, Manager, Canadian Forestry Association.

Mr. W. C. Cain, Deuty Minister of Lands and Forest, Ontario.

Mr. Roland D. Craig, B.S.A., F.E., Forest Resources Specialist, Dominion Forest Service.

*Mr. M. A. Grainger, President, Canadian Society of Forest Engineers.

Dr. C. D. Howe, Dean Faculty of Forestry, University of Toronto; Vice-President, Canadian Forestry Association.

*Mr. Clyde Leavitt, M.Sc.F., Chief Fire Inspector, Board of Railway Commissioners, Canada.

Lieut.-Colonel T. G. Loggie, Deputy Minister of Lands and Mines, New Brunswick.

Mr. G. R. Naden, Deputy Minister of Lands, British Columbia.

The Earl of Stafford, England.

*Mr. Ellwood Wilson, Chief, Forestry Department, Laurentide Paper Company.

OFFICERS OF THE CONFERENCE

CHAIRMAN

Major-General Lord Lovat, K.T., K.C.M.G., D.S.O.
Chairman, Imperial Forestry Commission.

MANAGER

E. H. Finlayson, B.Sc. F., A.M.E.I.C., Acting Director of Forestry, Department of the Interior, Canada.

SECRETARY

Roland D. Craig, B.S.A., F.E., Forest Resources Specialist, Dominion Forestry Branch,
Department of the Interior.

CONCERNED ABOUT STUMPAGE TARIFF

An important delegation of timber limit holders waited on the provincial Cabinet at Quebec last Wednesday, to urge the maintenance of the 1918 tariff of stumpage dues.

Among those present were: Sir Henry Egan, Hon. Geo. Bryson, Brig Gen. White, Messrs Gerard Power, Dan McLaughlin, John Black, E. A. Dunlop, M. Small, M. Holmes, D. C. Champoux, R. F. Grant, F. Faure, G. E Gillis, W. Grant, Jack Price, F. Hall, R. O. Sweezey, J. Hamilton, J. W. Smith, S. J. Fisher, John Power, H. Nesbitt, Paul G. Owen, secretary of the Limit Holders' Association, A. Seabourn.

It was represented to the Cabinet that last year the enforcement of the 1920 tariff had been delayed for another year, on the conditions that lumber camps would be operated in full swing, which had been done with the result that there had been unusual activity recorded. The lumbermen had at the time taken a risk, but had kept to their promise, and even now camps were still scenes of great activity The result was that after undertaking these risks the limit holders were now menaced once more of falling under the 1920 tariff of stumpage dues, which was over 20 per cent. above the present one. Conditions had only slightly improved, it was pointed out, and the rise in the wages contributed to a great extent in warranting the limit holders to ask for the continuance of the 1918 tariff.

Premier Taschereau and the other ministers present decided to study the matter today and the limit holders will be given an answer later.

NEW MINISTER OF LANDS AND FORESTS

Hon. James Lyons, of Sault Ste. Marie, who is the new Minister of Lands and Forests, has entered upon his new duties in the new Ontario Government, succeeding Hon. Beniah Bowman. Mr. Lyons is widely known in the north and is well acquainted with the interests of the settlers in the lumbering and pulpwood arena. He recently retired as President of the Saut Ste. Marie Board of Trade and advocates that an embargo be placed on the export of hard woods from Ontario, the supply of which is rapidly diminishing.

DIAMOND STATE FIBRE CO. OF CANADA IS THE NAME

On page 750 of our issue of last week at the conclusion of the Article entitled "Fibre, its qualities and use" an error was made in acknowledging the loan of the cuts used to illustrate the article. We expressed ourselves as being indebted to the Dominion State Fibre Co. whereas, obviously, the intention was to credit the well-known DIAMOND STATE FIBRE CO. OF CANADA LTD.

Worthington Pump and Machinery Corporation have put on the market recently a new type of deep well pump, which uses one or more impellers much like a ship's propeller to elevate the water or other liquid. The efficiency, capacity and operating economy of this new pump are said to be far in advance of any deep-well pump now in use.

Look your difficulties in the face, and they will begin to run.

CAN ANY PAPER MILL IN THE WORLD BEAT THIS?

The crew of No. 5 paper machine of the Belgo Canadian Paper Company Limited at Shawinigan Falls, Quebec, claims to have the world's record for a single day's production of newsprint paper. This, of course, means the world's record for any grade of paper, and their figure, which was reached last week, was 96.11 tons. Mr. Maurice Neilson under whose superintendency the above record was made on the machine recently supplied the Company by Charles Walmsley Company Limited, and driven by the Harland Interlock Electric Drive is certainly to be congratulated on this excellent performance. We doubt if any paper mill can claim to produce more paper on one machine, but the boys who ran the Belgo machine stated that if this claim is disputed, they will push it up higher and have in mind eventually making 100 tons at least on this machine.

INSTALLING "TREMOR" SCREENS

The Watford Engineering Works, Ltd, of Lower High Street, Watford have received an order from the Empire Paper Mills, Greenhithe, Kent for their large size No. 3, outward flow "TREMOR" stainers for the new large paper machine being installed in their mill by Messrs Charles Walmsley & Co. Ltd., Bury, Lancashire.

The engineers of Watford Engineering Works have also introduced a new flat strainer working upon the "TREMOR" system to supersede the jog knotters as auxiliaries to machine strainers and other purposes.

In the new strainer the plate frame is suspended in a Vat carried by a shaft fitted with the "TREMOR" motion, which latter gives a vertical rise and fall to the plates over the whole area, thus eliminating the dead ends of the plates near the fulcrum as was the case in the old jog knotter — by this means a given plate area is approximately twice as efficient as formerly, owing to the whole surface of the plates having the same movement. The motion is obtained in the same manner as their "TREMOR" strainers, so is perfectly silent and effective.

The strainer is also being adapted as a small inward flow for use in hand mills and for very small outputs. In this instance the pulp is passed the reverse way, viz: from the underside to the top side of the plates. No joint is required and the floating rubber and rubber solution is easily skimmed off the surface of the stuff as it floats before passing through the Plates.

The plates for the inward flow machine are made basket shape to more readily allow any refuse to rise to the surface before passing through the slits.

Recognizing the favorable and the unfavorable factors in the situation, the outlook is for good business for the remainder of 1923 and expectation of its continuance into 1924, according to the monthly bulletin of the National Bank of Commerce, New York.

No man ever wakes up to find himself famous. The truth is he hasn't been asleep.

Technical Section

REVIEW OF RECENT LITERATURE

RAW MATERIALS

A-7 The Sulphur Industry of the United States. ALBERT G. WOLF. **Pulp & Paper,** International No., 153-157 (Dec. 1922). An outline of the development of the U.S. sulphur industry and of its present status.-A.P.-C.

SCREENING AND DEWATERING

G-8-9 The Kamyr Pulp Press Machine. O. L. BERGER. **Paper Trade J.** 75, No. 26, 51-2 (Dec. 28, 1922); **Paper** 31, No. 9, 14-15 (Dec. 20, 1922); **Paper Mill** 45, No. 52, 18 (Dec. 30, 1922). In its complete form it consists of a suction cylinder mold with vacuum pump, two pair of corrugated presses, and a pulp cutter. The pulp leaves the mold testing 22 to 24% air dry. The first press brings this up to 40% and the second press up to 55% air dry. The high test of pulp leaving the mold in connection with the special construction of the grooved and corrugated presses make it possible to run through the presses without the use of felts. Compare U.S.A. patent 1,387,954 and Can. patent 219,484; **Pulp and Paper** 20, 655 (Aug. 3, 1922); **Paper Trade J.** 75, No. 7, 56 (Aug. 17, 1922). Also Can. patent 219,279; **Pulp & Paper** 20, 794 (Sept. 14, 1923); **Paper Trade J.** 75, No. 12, 51 (Sept. 21, 1922).-A.P.-C.

G-6 K-11 Water Supplying Device for Flat Screens. A. H. BORRESEN and K. HOLTER. Can. pat. 228,775, Feb. 20, 1923. The water is supplied through a longitudinal slot located substantially in the screening plane and directing the current of water along the surface of the screening plates in the direction of flow of the pulp. It is thus supplied below the layer of pulp, instead of from above, and exerts the best possible feeding and diluting effect on the pulp.-A.P.-C.

K-12 Application of Steam Traps To Paper Machine Driers. L. D. Goff. **Paper Ind.** 4, 1719, 1721, 1723 (Mar. 1923); **Pulp & Paper** 21, 457-458 (May 3, 1923). A discussion of the merits of the Armstrong steam trap in ensuring proper steam circulation and temperature gradation in paper machine driers. — A.P.-C.

SPECIAL PAPERS

K-23 Use of Starch Products in Making Colored Lines on Marbled, Glazed and Calendered Papers, and Card Board. RINGE & CO. Ger. pat. 369,470. **Papierfabr.** 21, 131 (Mar. 4, 1923). The color is mixed with starch products to which is added ferrous sulphate in solution. The resulting paper can be written on with ink.-J.L.P.

K-23. Insulating Paper. Fusaichi Tagawa. Jpn. pat. 39,173, July 7, 1921. Paper is passed through a paste prepared by mixing together a solution of 100 parts of globulin and 10 parts of borax in 500 parts of water, a solution of 70 parts of shellac and 14 parts of borax in 500 of water, and 60 parts of saturated lime water. The sheets are piled to suitable thickness pressed with a hot hydraulic press, and calendered. — A. P.-C.

K-23 The Manufacture Of Paper For Wrapping And Containing Foodstuffs. James Strachan. **Paper Mill** 47, No. 19, 34, 46 (May 12, 1923). A description of the qualities required of various classes of paper for holding and for carrying foodstuffs. — A. P.-C.

K-23 Paper With A Rough, Fibrous Surface. J. W. Zanders. Ger. pat. 371,506. **Papierfabr.** 21, 210-211 (Apr. 15, 1923). A soft paper, with good felting, is covered on both sides with tough, hard paper by means of an adhesive and dried. The sheet is then split in the middle. — J. L. P.

K-23 Wax Paper For Packing Hygroscopic Tablets. W. Grunewald. **Zellstoff U. Papier** 4, 87-88 (Apr. 1923). Hydroscopic medicinal tablets, containing hexamethylenetetramine and theobromine, absorbed only 1.4% moisture, after a day exposure in an atmosphere containing 100% relative humidity, when wrapped in paper which had been treated with aluminum acetate and aluminum soap and afterwards treated with glue, gum arabic, or dextrine. — J. L. P.

K-23. Safety Paper. V. E. Goddman assignor to Waterlow & Sons Ltd. U. S. pat. 1,417,820 May 30, 1922. A black or dark surfaced paper is coated with an opaque but light-colored composition such as a composition containing manganese ferrocyanide which is sensitive to chemical eradicators. — A. P.-C.

K-23. Treatment of Japanese Paper. Masayoshi Ishii. Jpn. pat. 39,541, Aug. 16, 1921. A strong and waterproof paper is manufactured by treating thin Japanese paper with a solution of 375 g. of **Chondrus collatus,** 18.8 g. of flowers of zinc, 75 g. of wood pulp in 9 liters of water, and then rolling through hot rollers.—A. P.-C.

K-23. Asbestos Paper. N. Sulzberger. Eng. pat. 186,409, June 24, 1921. Pure asbestos paper (containing no organic binder) is made by drying a pulp containing 50 parts of long fibered asbestos and 6 parts of a colloidal solution of aluminum silicate prepared with the aid of tannic acid and ammonia. Alternatively asbestos sheets containing an organic binder and preferably an oxidizing agent such as sodium nitrate or nitrocellulose, are heated at a temperature sufficient to destroy the organic binder. Asbestos material prepared by this process is suitable for cigarette wrappers, insulating materials, and carriers for catalysts.—A. P.-C.

K-23. Metal-Coated Paper. K. Wickel. Eng. pat. 183,143, July 17, 1922. In the preparation of metal-coated or metallized paper impermeable to water, oil and air, and suitable for packing food or as a substitute for gold leaf, bituminous substances are employed as a binder, the bituminous substance, such as "vulkabitumen," may be employed in the melted condition: or it may be dissolved in hydrocarbons, carbon tetrachloride, or similar solvents, and the powdered metal (bronze) may be mixed with the solution and applied by rollers, brushes, or scrapers, or by atomizers; or the dry process may be used. The product may be made pliable or stiff according to the hardness of the bitumen used.—A. P.-C.

K 23 A Study Of The Experimental Manufacture Of Condenser Paper. Merle B. Shaw and George W. Bicking, U. S. Bureau of Standards. **Paper Ind.** 5, 309-311 (May 1923). After a brief description of the use and requirements of condenser papers, the authors describe tests carried out with the experimental paper making equipment at the Bureau of Standards, on the results of which they base the following recommendations: New cotton and linen cuttings, carefully cut and dusted, should be used raw in the beater. In cutting and dusting a self-cleaning magnet roll to remove metal and conducting particles could be used to advantage. Filtered water should be used and handled in pipes of non-corroding material. Pumps handling stock and water should be of a non-corroding material. The beater should have a stone or cement and quartz roll and bedplate. In the sand trap there should be a self-cleaning magnet roll to serve as a last precaution. If a fourdriner machine is used the wire should not be coarser than 90 mesh and a pickup felt around the upper couch roll is desirable. If a cylinder machine is used care must be taken to obtain a well-formed sheet free from pin holes. A supercalender stack may be necessary to reduce the thickness and to give denseness to the paper. — A. P.-C.

ARTICLES OF PAPER

L-4. Oilproof Coating. A. J. Rowland. U. S. pat. 1,395,016, Oct. 25, 1921. An oil-proof composition adapted for coating and impregnating paper receptacles is formed of 40 per cent. of zinc or aluminum salts of alginic acid and 60 per cent of 26 deg. Be. ammonia. — A. P.-C.

L-4. Oil and Grease-Proof Paper Container. T. M. Godfrey, U. S. pt. 1,395,272, Nov. 1, 1921. Successive interior coatings of (1) glycerol, water and casein and (2) glycerol water and a water-soluble adhesive such as gelatine or gum arabic, which serves to mask any objectionable odor of the casein, are applied. — A. P.-C.

L-5. Waterproofring Vulcanized Fiber. J. McIntosh. U. S. pat. 1,425,878, Aug. 15, 1922. Wet vulcanized fiber is immersed in a waterproofing liquid such as oil or asphalt until it has become thoroughly impregnated and it is then dried to free it of water. — A. P.-C.

L-6. Solidifying Fibrous Pulp. E. Nishina. Eng. pat. 185,399, Aug. 4, 1922. Fibrous pulp mixed with adhesive material is solidified in thin film by projecting it under high pressure from spouts on to a slowly moving surface of gauze, felt, etc. After drying, the material is removed from the surface and calendered on rolls or pressed into molds. Alternatively, the pulp may be left adhering to the surface, which then serves as a reinforcement. The process is suitable for making material such as pasteboard, papier mâchè, artificial leather, belting, linoleum and flooring. — A.P.-C.

L-7. Treating Paper for Spinning. E. Fues. Eng. pat. 187,987, Oct. 28, 1922. Parchment paper is rendered suitable for spinning into threads, etc., by treating it with solutions of aluminum sulphate and formaldehyde and then drying it quickly on rolls at 100 deg. C.; the treated paper is prevented from subsequently becoming brittle by drying it at a lower temperature, e.g., 60 deg. to 85 deg. C., for a longer period, and then for a short period at a higher temperature. The quantity of acid substances used may also be reduced, e.g., to less than 1 per cent. of aluminum sulphate by weight of dry paper, in which case the paper can be dried quickly at 100 deg. C., without subsequent cracking. The percentage of formaldehyde used may be increased and substances such as benzoic and salicylic acids may be added to give a disinfectant action. — A. P.-C.

DRYING

M-7 Heat Transference in the Ventilation of Machine Rooms. J. O. Ross. **Paper Trade J.** 76, No. 15, 167-169 (Apr.12, 1923); **Paper** 31, No. 26, 69-72 (Apr. 18. 1923); **Paper Mill** 47, No. 16, 16, 18, 36 (Apr. 21, 1923); **Paper Ind.** 5, 334-336 (May 1923). An outline of the evolution of machine room ventilation, showing the importance of proper ventilation on quantity of output and quality of finished product, and emphasizing the great savings which can be effected by recovering the heat from the moisture-laden warm air from the machines. There are at present two methods of doing this: by heating the incoming air by means of a Briner economizer or by heating water directly by passing the vapor through a water spray. — A.P.-C.

THE ENGINEERING OF EXCAVATION, By George B. Massey. — John Wiley and Sons, New York, and Renouf Publishing Company, Montreal. — 376 pages, illustrated.

The problems of excavation are common to many branches of engineering and are treated of incidentally in numerous text-books and other volumes. Here, however, the author has drawn upon an experience of more than twenty years specialized in excavation work to give the subject comprehensive treatment. The result is one of the growing number of special treatises useful for reference. The author states specifically that his object is to help the engineer to choose the most suitable machinery for the work he has in hand.

Commencing with revolving shovels, the land types of excavators are described, the principles upon which they operate, and their special applications. A number of the newer types mounted upon caterpillars are included. Ditchers and "dry land dredges" are treated of fully. The various accessories such as buckets, engines, pumps, drills and the means of transportation, are treated separately. A chapter is devoted to hydraulic work and hydraulic lifts. Dredges for the purposes of excavation and for placer mining are described comprehensively. While this book could not be used effectively as a text for teaching, and while its nature might make it difficult of comprehension to the young engineer, it will form a very useful work of reference for the engineer with whom excavation is an occasional, but necessary, employment.

THE ACTION OF THE BEATER

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Satan has many tools, but a lie is a handle that fits them all.

SULPHUR CONSUMPTION IN THE MANUFACTURE OF SULPHITE PULP

By W. G. MacNAUGHTON

Secretary-Treasurer, Technical Association of the Pulp and Paper Industry

In practice the quantity of sulphur used per ton of product is usually regarded as an index of efficiency in the operation of a sulphite mill.

In "Manufacture of Pulp and Paper," Dr. Johnsen, author of the chapter on Sulphite, says: "There is great variation in the amount of sulphur per ton of pulp because this depends a great deal upon the yield in the cooking process and still more upon the efficiency of the acid plant, especially of the recovery system. While it should be possible in commercial operation to produce pulp with 200 pounds of sulphur per ton of pulp continuously, the actual sulphur consumption in pulp practice varies between 220 and 300 pounds per ton of pulp."

This figure confirms the work of Bryant who determined that under the conditions investigated, 184 pounds of sulphur was actually used in producing a ton of sulphite pulp.

Effect of Yield

In considering the effect of yield on sulphur consumption two factors enter, the cellulose content of the wood used and the degree to which the lignin or non-cellulose material is removed in the sulphite process. A third factor also enters, namely the possible loss of fibre between the digesters and the finished product.

As the cellulose content of spruce wood is higher than hemlock, as would be expected the sulphur consumption for spruce sulphite is proportionately lower. Similarly easy bleaching sulphite having had more of the non-cellulose material removed than in strong grades, would be expected to require a higher sulphur consumption and such is the case.

Apart, however, from the variations due to difference of species and quality of wood used and the resultant yield there is very generally an unnecessary loss of sulphur in some form, either in the acid-making plant or in connection with the recovery system.

Problem of Losses

Losses, that are clearly obvious, are the leakage of gas and acid liquor from defective cooling and distributing pipe lines and tanks. If a sulphite mill has a sulphur consumption much in excess of 250 pounds per ton it should first examine its equipment. If found in perfect condition, gas and liquid tight, the next investigation should be the plant operation.

In the preparation of the acid the first step is the burning of the sulphur. In this, care should be taken to avoid the production of sulphuric acid instead of sulphur dioxide. Generally speaking, this may be done by maintaining uniform combustion conditions with the lowest possible excess of air and using sulphur that is free from moisture.

For best operation, it is necessary to feed the sulphur in melted form and to use either a recording pyrometer or recording gas analyser for control purposes. A combustion chamber has been found necessary between the sulphur burner and cooler if a gas of high SO_2 content is to be produced. As about 21 per cent. is the maximum it has been found in practice that a safe limit is about 18 per cent. when a properly designed combustion chamber is used.

In the absorption towers if SO_2 gas is discharged at the outlet the liquid distribution should be examined as the liquid may be passing down one side of the towers with the gas passing up the other.

In the recovery system high sulphur may be traced to the waste of relief liquor produced during the first part of the digestion, but if the liquor is recovered the relief cooling equipment may be inadequate. As is well known, the relief gas is practically pure SO_2, about six times as strong as the burner gas. For proper recovery ample cooling equipment and cooling water of low temperature is necessary.

In the composition of the cooking acid, it may be pointed out that increased combined results in an increased sulphur consumption.

In the cooking operation where a strong grade is desired, it frequently occurs that the digester is blown at a high test. In doing so, considerable sulphur is lost in the sulphur dioxide held by the digester contents, and thereby may offset the higher yield in terms of sulphur consumption.

PULP AND PAPER SCHOOL TAKING SHAPE

Plans are progressing for the operation of a pulp and paper school in this province, which was provided for at the last session and has been assented to by the Lieutenant-Governor by a recent Order-in-Council, authorizing preliminary steps.

It is learned that the new school, which is to prove such an asset to the pulp and paper mills, will be annexed to the technical school in Three Rivers. This point has been found most suitable for the purpose of the school, being in the centre of the pulp industry of the St. Maurice Valley.

While employed at the large mills in that city employes will have the opportunity of following theoretical and practical courses at the new school.

The forest rangers' school at Berthierville which is part of the curriculum inaugurated by the Government, will be opened in the first week of September.

BOSSES WERE WISE

The heads of a big manufacturing plant had this notice posted at the beginning of the summer season:

NEW RULE FOR OUR EMPLOYES

All requests for leave of absence on account of toothache, severe colds, and minor physical ailments, and on account of church picnics, weddings and funerals and the like, must be handed to the foreman in charge of your department before 10 a.m. on the morning of the game. — Houston.

The Seaman Paper Company has opened a branch office in Indianapolis. John M. Schlenck is district manager and Ben F. Schaufelberger is in charge of the territory adjacent to Indianapolis.

The paper manufacturer's supply business of N. E. Berzen, New York City is now being conducted under the name of S. J. Fischer, Inc. Under a recent reorganization the company's officers are: Nat E. Berzen, president; S. J. Fischer, treasurer and D. A. Fischer, secretary.

PULP AND PAPER NEWS

It is learned that the National Pulp Corporation, Limited, which was recently granted an Ontario charter, with headquarters at Hamilton, Ont., is only as yet in the promotion stage. The object of the company is stated by the solicitors to be the repulping of newspaper and other printed matter and extracting the ink. Judson Culp, of Hamilton, is the promotor and is the owner of a process for de-inking which it is proposed the company will use when it starts operating.

James Currie, of Stirling, Ont., who has spent 63 years with type and press, celebrated his eightieth birthday a few days ago. He entertained the Bay of Quinte Press Association at his home subsequent to their annual meeting when he was congratulated on his vigor by the newspaper men present. Mr. Currie only relinquished the ownership of the Stirling News-Argus three months ago.

R. J. Flynn, sales manager of the Buntin Reid Company, Limited, paper merchants, Toronto, who is also Mayor of Weston, near that city, was recently offered the combined positions of clerk, treasurer, and assessment commissioner of Weston. Mr. Flynn states that while he did not seek the office he was flattered at the offer but it was not likely he would accept it. The salary was $2,500 per year.

The announcement was made last week that the appeal in the case of the Fort Frances Pulp and Paper Company, Limited, vs the Manitoba Free Press Company, Limited, and others, in connection with a claim to recover money paid in excess of prices fixed by the Paper Control Board under the War Measures Act of 1914, had been dismissed with costs by the judicial committee of the Privy Council in London, Eng. The action was brought to recover sums the respondents had paid for paper delivered at control prices. No question was raised concerning the figures, and the trial judge treated the question only as to whether the paper tribunal and paper controller had been validly vested with powers to make the orders in controversy. The Court of Appeal held that it was unnecessary to go into question of the validity. Whether the action of the paper tribunal was legal or not, the Court of Appeal held that the appellants, notwithstanding that they had acted under pressure, had bound themselves to accept the prices fixed. Their lordships of the judicial committee have not been able to satisfy themselves that this view was reliable. The tribunals, they state, had exercised control not only over prices, but over the supply of the paper itself, and were in a position to exercise, and did exercise, pressure that was practically irresistible. They say further: "It is enough to say that there is no clear, unmistakeable evidence that the Government was in error in thinking the necessity was still in existence at the dates on which the action was taken by the paper tribunal. Their lordships find themselves unable to say that the Dominion Government had no reason for temporarily continuing the paper control after the war ceased, but while the effects of the war conditions still might be operative. They therefore are unable to accept the propositions in the powerful argument of the appellants." The appeal was dismissed with costs and the petition by the appellants for leave to adduce further evidence was also dismissed.

The Abitibi Power and Paper Company, Limited, at Iroquois Falls, Ont., is now sending out a train of paper (from 18 to 20 cars) every day of the week excepting Sunday. Now that the company's railroad into its timber limits is running, and with it some thirteen miles of branch lines, the company will be able to effect a number of savings. The railway will make it possible to get wood to the mill all winter thereby rendering unnecessary the storage of a big wood pile, while the logs can be brought to camp more quickly than by former methods of logging.

Many paper men in Ontario learned with sincere regret of the death in Kalamazoo, Mich., of C. A. Beck, a director of the Provincial Paper Mills, Limited, and a stock holder in the Interlake Tissue Mills, Limited. S. F. Duncan, Toronto, secretary of the Provincial Paper Mills Company, attended the funeral on Wednesday of last week.

The first run of sulphite bond paper at the Port Arthur Division of the Provincial Paper Mills, Limited, was made last week. Samples to hand are of excellent quality with good finish and texture. The company report an excellent market for the product throughout Canada.

N. E. Wainwright, Toronto, who is handling the output of the Port Arthur mill of the Provincial Paper Mills, Limited, has returned from a business trip to Port Arthur and Winnipeg.

Lieu.-Col. Thomas Gibson, of Toronto, vice-president of the Spanish River Pulp and Paper Mills, Limited, will attend the Discovery Week celebration at Sault Ste. Marie, Aug 4 to 8. Lieu.-Col. Jones, of the Spanish River Company, is chairman of the general committee in charge of the celebration.

It was with extreme regret that the Ontario paper trade heard of the death at Hamilton, Ohio, of Thomas Beckett, President of the Beckett Paper Company, manufacturers of the famous Buckeye cover paper. Among those who attended the funeral in Hamilton, Ohio, last week was E. B. Munro, of the Wilson, Munro Company, Toronto, who are the Ontario Agents of the Beckett Company.

George Carruthers and President H. F. E. Kent of the Canadian Pulp and Paper Association have returned to Toronto after having attended a meeting of the Council of the Association at Montreal.

W. J. Bell, Vice-President and General Manager of the Spanish River Lumber Company, Sudbury, received the congratulations of many friends in the lumber and pulpwood industries on the occasion of his birthday on July 29. Mr Bell was born at Pembroke, Ont., on July 29, 1859.

Many in the paper and printing trades extended birthday congratulations to William Stone, President of Rolph-Clark-Stone, Limited, Toronto, Lithographers etc., on July 8th. Mr. Stone was born in Birmingham, England, on July 8, 1856.

Ritchie & Ramsay, Limited, coated paper manufacturers, Toronto, have been sending out some very attractive direct mail advertising setting forth the merits of their "Luxacoated" porcelain and "Red Seal" coated book. "R and R" coated folder is another line that has been perfected to meet the growing demand for a high grade coated paper that will fold and print well. The body stock is composed of rags and No. 1 bleached sulphite, giving the necessary strength and folding qualities, while particular attention has been given to the coating, in order to produce a resilient sheet that will give the desired results. The firm report a good demand for their products with their mill operating to capacity.

The Summer Number of the Wrightcroft Review, a quarterly house organ put out by Croft & Wright, printers, Toronto, has just been put in the mails. The book is well printed on good stock and in typography as well as in the quality of the trade and general articles the edition ranks well with its predecessors. There is a department devoted to shop talk and there is a half tone reproduction of "After the Bath" which well illustrates the summer idea. The publication is a credit to the firm and to the editor, Robert D. Croft and his assistants.

A deputation from the Brampton Gummed Paper Company, whose plant was badly damaged in the recent windstorm, but which has since been completely restored, waited on the Brampton Town Council last week and asked for a guarantee of bonds amounting to $20,000 for twenty years. In return they offer the town a first mortgage on their factory appraised by the insurance companies at $23,500 and on their plant valued at $35,000. They desire to build an addition to their factory worth $10,000 and would give a first mortgage on the new building. The Council deferred action and in the meantime will investigate the security offered.

According to word from Sault Ste. Marie, Ont., the Algoma Central Railway is carrying about 30 cars of pulpwood per day. The major portion of this is for the Spanish River Pulp and Paper Mills at the Sault, but several cars a day are being taken to Michipicoten to be loaded on boats for transportation to the Port Huron Pulp and Sulphite Company. This company is taking pulpwood from Michipicoten at the rate of a cargo per week. These cargoes run from 600 to 700 cords.

The great and beneficent project begun by Sir William Gage, late head of the W. J. Gage Company, manufacturing stationers, Toronto, 26 years ago, entered on a new stage last week with the formal opening at Gravenhurst, Muskoka, of the main building of the Muskoka Hospital for Comsumptives, which replaces the one destroyed by fire in 1920.

Canadian Vickers, Limited, Montreal, last week launched the first seaplane constructed in this country. It is one of six ordered by the Dominion Government for forest patrol work, and particularly for reporting forest fires. The machine has a carrying capacity for six persons. The wings and propellors are of Sitka spruce, grown in B. C., which wood was used in very large quantities for aeroplanes during the war. The Rolls Royce engines are of 375h. p., and were constructed in England.

The manufacturers of fibre and corrugated shipping cases have made an arrangement with the Shoe Manufacturers' Association of Canada under which standard sizes will be made for shoe manufacturers.

The toilet and tissue section of the Canadian Pulp and Paper Association held a meeting in Ottawa last week.

J. R. Walker and Company, Montreal, have added a paper jobbing department to their paper stock business. This is carried on at their warehouse at 267 Wellington Street, and is under the management of Mr. R. Rolland.

The Interlake Tissue Mills, Limited, have put on the market a new line "Household Towels"; each roll contains 300 towels. As the line implies, the goods are intended for household use, such as in cooking, roughing out pots and pans, polishing glass, absorbing the surplus grease from fried foods, etc. Another new line of toilet tissue is Velvetissue, the rolls of which are in pure white wrappers of coated stock, and also entirely wrapped in pure white crepe tissue, which keeps the paper clean until it reaches the consumer. The White Cross brand of tissue is now wrapped in crepe tissue.

Mr. B. C. Howard, one of the most prominent lumbermen and pulpwood dealers in Eastern Canada, died suddenly in his office at Sherbrooke July 27. He was born at Stanstead in 1865. The firm of B. C. Howard & Co., Ltd., did a large business in pulpwood, and operated limits in Beauce County, P. Q., together with a mill at Lake Frontiere, Montmagny County.

MAY CHANGE — FORESTRY REGULATIONS

A strong sentiment in favour of the elimination of spring and summer slash burning has been created by the recent disastrous forest conflagrations in New Brunswick, many of which have been traced to slash burning sources. Residents of many sections of the province, particularly those most seriously affected by forest fires, are demanding greater precautions in the control of slash burning fires.

As an example of this public sentiment which has been aroused, the Restigouche County Council in semi-annual session recently adopted a resolution in support of the elimination of spring and summer burning and asking the Department of Lands and Mines to take steps in this direction. These demands which are being received from various sources also advocate the supervision of slash burning under qualified persons during periods when the fire hazard is at a minimum in the Fall. Forestry officials have long ago advocated such steps stating that sooner or later the elimination of burning during the period mentioned, would become imperative.

Life is too short to be unhappy in business. If business were not a part of the joy of living, we might almost say that we have no right to live, because it is a pretty poor man who cannot get into the line for which he is fitted.—George Lippincott Brown.

UNITED STATES NOTES

Statistics of paper exports from the United States during the month of May, as reported by the Department of Commerce, were as follows: Newsprint, 2,992,243 pounds, valued at $158,056; uncoated paper, 2,265,249 pounds, valued at $264,673, surface coated paper, 589,863 pounds, valued at $75,994; grease proof and water proof paper, 121,701 pounds, valued at $12,670; kraft wrapping paper, 37,597 pounds valued at $3,354; other wrapping paper, 1,683,761 pounds, valued at $155,832.

Excavations for the erection of a new $1,500,000 paper mill at Bogalusa, La., were begun last week. The mill, when completed, will make wrapping paper and will give steady employment to about 200 men. Thousands of cords of pulp wood will be bought from the farmers of the vicinity. The present plant, including the power station and pulp mill, will be largely improved and enlarged. Salt cake will be made in connection with the operation of the new paper mill.

Forest fires in Pennsylvania this spring did damage estimated at $687,372, according to the Pennsylvania Department of Forests and Waters. Because of the dryness of the weeds the fires were more numerous than in any other year, 2,766 having been reported, and these burning over an area of 2,321,085 acres. Most of these forests were privately owned.

A publication, to be known as the International Paper Monthly, will make its initial appearance next month. The magazine is intended for general circulation among International Paper Company employes. It will be edited by A. G. Slater.

Six thousand girls and other workers employed in New York City paper box factories have declared their intention to strike unless they are granted minimum wages ranging from $22 to $50 a week. The girls also demand recognition of their union with conditions said by employers to be impossble if the industry is to continue. One manufacturer declares he will appeal to the State Industrial Commissioner to adjust the grievance. A strike a few weeks ago in a Long Island City paper box factory was ended by mediation.

Col. Wm. S. Greeley, chief of the United States Bureau of Forestry, has prepared a statement on the national consequences of timber depletion in which he issues the warning that the predicted timber famine has already overtaken the eastern and central sections of the United States Col. Greeley describes "the manifest requirements of the situation," as first: make available timber go as far as it will through reducing waste and improving the efficiency of its use. Second: make progress as rapidly as possible toward a permanent and sustained supply of timber by increasing the growth of woodlands and by putting idle acres to work growing trees. "To sum up." he adds. "the economic and social losses involved in the rapid depletion of the forests of the United States are so large and far reaching as to challenge the attention of our most profound thinkers, to the end that there may be a more comprehensive plan for the elimination of waste in the growth and utilization of forest products and for reforestation."

Senator James Couzens of Michigan sailed for Europe on the Leviathan last Saturday for a two months tour, during which he plans a study of forest conservation and reforestation in Germany and other European countries. The Senator, who is a member of the Senate Committee on Reforestation, said he planned particularly a visit to the Black Forest, where, he understood, conservation work is well established. "The committee will begin hearings in San Francisco September 3," said Mr. Couzens. "I already have gone over the timberlands of the West in the immediate vicinity of this hearing. I think that by making this study abroad I can really be of more service to the committee than by revisiting the Western forests.

Demands for various grades of paper for fall delivery is expected to pick up earlier than usual this year. There are strong indications, according to the American Paper and Pulp Association, that there will be an influx of orders to the mills about the first of September, or a month ahead of the usual time, thus resulting in a renewal early in the fall of the large scale production of the spring. At the present time, the fine paper mills are operating at about 85 percent of capacity while book and wrapping paper manufacturers in many localities are running full. The demand for book papers is described as already increasing.

All previous records in planting forest trees on private land were eclipsed in New York State during the Spring season this year. During the war reforestation fell off perceptibly, but there has since been a recovery and this Spring saw all records surpassed. The addition of trees to be set out in the Fall will undoubtedly bring the total for the year beyond all previous planting operations on both private and public holdings.

Eleven important additions to the forest fire laws of the State of Washington have been made as the result of a bill recently passed by the State's Legislature. Among other things, the bill provides a penalty for the violation of any of the rules and regulations made to protect the forests of the State, and it requires all railroads operatings trains through forested districts to provide speedier patrol. The bill also requires any person operating a stationary engine to clear away forest material from around the setting and to take other specific precautions against the spreading of fire. Under one provision of the bill it becomes a misdemeanor for any person during the closed season to throw away any lighted matches, tobacco, cigars, cigarettes, or any other lighted material in any forest region of the State. Still another provision strikes at the depredations made within recent years on young forest trees for Christmas tree purposes, and provides a penalty for such cutting.

COST ASSOCIATION LITERATURE AVAILABLE

By THOMAS J. BURKE, C.A.

Secretary-Treasurer, Cost Association of the Paper Industry

The following is a list of material which has been forwarded to Members of the Cost Association from time to time. A few extra copies of these articles are available for distribution, to any members of the American Paper and Pulp Association. Requisitions should be forwarded to the Secretary of the Cost Association of the Paper Industry, 18 East 41st Street, New York City, stating the name of article and number of copies desired.

Uniform Cost Systems, E. R. Belt.
Cost Figures that Help you Sell, W. R. Bassett.
Report on Beater Furnish.
Treatment of Overhead when Production is Below Normal, B. C. Williams.
Treatment of Costs during Periods of Varying Volumes of Production.
Executive Use of Cost Systems, R. Dunkerly.
List of Depreciation Rates used by 152 Mills.
Extract from article in "American," by E. N. Hurley.
Need of Close Contact Between Cost and Technical Man, by Fred C. Clark.
Disposition of Trackage Costs in Logging Operations.
Fundamentals for Cost Systems.
Commissioner Gaskill's Letter, Oct. 5, 1921.
The Balance Sheet as the A. & Z. of Costing Systems—by A. Winder.
Fine Paper Costing, L. W. Farrow.
Amortization, by T. W. Dinlocker.
Internal Revenue Bull. on Depreciation, Jan. 9, 1921.
Uniform Accounting Systems Urged for Trade Associations, Prof. Copeland.
The Opportunity of the Cost Accountant to do Analytical Work for the Executive, by Belt.
Relation of Budgetary Control to Cost Accounting—by J. L. McKinsey.
Overhead Distribution Methods, by Brugger.
Report of Committee on Depreciation.
Gaskill's Article on Price Cutting.
Letter and Article on "Cost Audits."
Standard Basis for Comparative Cost Estimates.
Taxation of Capital Gains.
Depreciation Progress Report.
National Standard Invoice Form and Letters.
Manufacturing Efficiency and Com. Conv. Costs, by T. J. Burke.
Federal Tax Bulletin No. 1.
Normal Burden Rates—By C. Van Zandt.
Benefits of Cost Knowledge, by E. R. Spaulding.
Fundamentals in Factory Accounting, by T. Haworth, F. C. W. A.
Memo. Explaining Methods Used in Specimen Cost Forms in Portfolio Submitted to Writing Paper Mfrs. Association, by Writing Cost Committee.
Economics for Executives (Letters).
Profit Insurances (Letters).
Standard Cost Estimate Sheet for Book Manufacturers (Letters.)
Members — Cost Assn. of the Paper Industry (List).
Comparative Conversion Costs (Letters).
Simple Profit and Loss Statement, Designed for Use of Paper and Pulp Mfrs. Whose Cost Records are incomplete.
Essential Cost Records for Woods Operations, by D. C. Crocker.
Report of Spec. Comm. on Standard Unit Wts. of Pulp.
Childs' Finding Steam Losses from Steam Costs."
Articles — "Executive Control Over Steam Costs."
Articles — "Profit and Loss Meters from Steam Plants."
Wall's Article — "Financial Statements."
Carruth's Article — "Methods of Establishing Wage Rates and Determining Promotions."
Working Plans for Standard Costs — by G. Charter Harrison.
Profit Margins, by T. J. Burke.
"What a Cost System" should do for you. U. S. Chamber of Commerce.
Cost Accounting (U. S. C. of C.)
"Overhead Expenses" (U. S. C. of C.)
"Budgeting for Business Control" (U. S. C. of C.)
"Perpetual Inventory or Stores Control" (U. S. C. of C.)
"Practical Application of Cost Work to Management", by B. E. Hutchinson.
"Paper Production Costs, Index to", by Scoville.
"Some Methods used in Obtaining From Mills, Data for use in Distributing Direct and Indirect Expenses to Grades or Lots," by Jas. A. Reilly.

PAPER BUYING ON SPECIFICATION

A letter written by W. G. McNaughton, secretary of the Technical Association of the Pulp and Paper Industry on paper buying brings out a difficulty of formulating specifications, as follows:

"Buying paper on written specification is without question a difficult matter. Generally speaking the composition governs the cost and establishes the grade. The criterion of real value, however, is suitability for the particular use to which it is applied. A paper of expensive composition might be entirely unsuitable and practically valueless for some common use. In the last analysis the suitability for the intended use is the deciding factor and this is manifestly difficult to indicate by means of detailed specifications. Even the composition and the usual well known tests are insufficient to cover all the phases of suitability for use. This is particularly true in regard to special writing and printing paper.

"I am inclined to believe that if paper is purchased, of a stated composition found in a satisfactory paper to establish the value, with the added requirement 'to match sample in color, finish and character' with numerical test values where they have a bearing on the suitability for its intended use, it is about as far as one would go."

SHERBROOKE MACHINERY CO. UPHELD

Judgment was recently given in the Exchequer Court of Canada in favor of the Sherbrooke Machinery Company, Limited, against one of its competitors for infringement of its Decker Drive and Spout Patent No. 135,317. The validity of the patent was acknowledged, and infringement by the Defendant was restrained by injunction. The Defendant was further required to pay royalty on the machines already manufactured, and was further restrained by injunction from making, constructing and vending the invention.

The Markets

CANADIAN TRADE CONDITIONS

Montreal, July 31. The month which closes today has been a period of quiet trade, due partly to seasonal reasons. Some jobbers have complained of this difficulty of securing orders and also that many of these are very small. Other firms have been more fortunate, but there is no doubt that on the whole, there has been a slackening in activity. At the same time, there is a hopeful note as to fall business. Many are looking forward to quite a revival, and are basing their expectations on a good harvest in the West, together with anticipations of a greater briskness in general commerce.

The newsprint division continues to hold its own. The production figures for the first six months of the year are the best in the history of the industry, reaching 619,802 tons, and with every indication of the demand keeping up, it is more than likely that the last half year will show a greater output, having regard to the fact that other machines will be started. The increased exports in June were entirely due to buying by the U. S. A. British South Africa and New Zealand took more than in June 1922, but against that, the United Kingdom and Australia were out of the market.

Other lines have shown little variation during the week. The paper stock department is fairly good. Rags are in satisfactory request, while waste paper is strengthening.

During June Canadian mills largely increased the exports of book and writing papers. The total of book papers was 798,100 pounds as compared with 121,400 pounds in the corresponding month of 1922. The increase was almost entirely due to exports to Australasia; Australia took 410,900 pounds as compared with 105,000 pounds and New Zealand 382,000 pounds as against 14,200 pounds. For the first half of this year the total was 2,668,500 pounds compared with 312,700 pounds, Australia buying the large amount of 1,813,300 pounds as against 167,200 pounds, while the purchases by New Zealand went from 117,800 pounds to 733,200 pounds. Bonds also show a very satisfactory gain, with a total in June of 234,600 pounds as compared with 831,900 pounds. In this class the distribution is on a broader scale. The United Kingdom took 47,300 pounds compared with nil in 1922, while South Africa and Japan were substantial customers, Australia being the only country to show a decrease. The volume for the six months was 1,311,700 pounds as compared with 343,600 pounds in 1922. The United Kingdom did not buy any Canadian bonds during the first six months of 1922, but this year purchased 125,900 pounds. The chief markets were Australia, New Zealand and Japan, the two first names increasing the purchases by 349,000 pounds; India bought 162,000 pounds.

The imports of book printing paper into Canada in June totalled $42,616. Ontario, British Columbia and Quebec being the leading buyers in the order named. In bonds and ledgers and envelope papers, the value was $10,572 with Manitoba and Ontario the chief purchasers. Ontario was the principal importer of envelopes of a value of $7,636, Quebec coming next with $2,051.

In the pulpwood section, business has fallen away a little. Groundwood is in small supply, with the demand good, at about $36 f.o.b. mill. Kraft is slow, while sulphite is not active. Bleached however, is a fairly good market. In June the United Kingdom was a larger buyer of Canadian groundwood, increasing her imports by over 2,000 tons; the U. S. A. declined a little and France was about stationary. For the six months the exports to the U. K. were 1,700 tons higher, those to the U. S. A. 1,900 up, and those to France 400 tons greater. In bleached sulphite the U. S. A. purchased about 3,000 tons more than in June 1922, and during the half year that country increased her imports by 14,000 tons. The exports of unbleached in June showed little variation, while for the six months the U. S. A., the U. K. and France bought more freely, Japanese purchases declining.

Ontario Markets

There is a distinctly optimistic tone to the Ontario pulp and paper market despite the fact that in some lines of paper business is not as good as it might be. On the other hand some classes of paper which have not been moving freely of late are beginning to show distinct signs of activity. For instance the coating mills report an excellent demand for their product with a far better volume of business than a month ago. One mill in the Toronto district which manufactures coated paper states that they have orders for over a month ahead and the mill is running at capacity. This is in marked contrast to conditions a few weeks ago when few of the paper mills, outside of book and newsprint plants, could boast of advance orders for their products. Although spotty in some lines the paper jobbing trade generally is showing signs of revival while the printing trade is still very quiet and there is considerable competition for orders with more or less price cutting. Most of the jobbers report fairly good business for July although with some the holiday season proved a severe strain. One of Toronto's largest paper distributing houses declared that July yielded an excellent volume of business and that the outlook for fall trade in paper lines was good. On the whole, it would appear as if there were more activity in the distributing end of the business just now than in the manufacturing end, although the reverse of this existed a few weeks ago. Although fairly busy it is stated that many of the mills are working on old orders and that new business is not presenting itself in the same volume as a few weeks ago. There has, however, been an improvement in some lines. For instance wrapping paper and paper bag plants, which have been rather dull, are now picking up nicely and the output is increasing under a steadily improved demand. Bonds, ledgers and writings are still in light demand but the manufacturing envelope trade holds up well and the same may be said of the tissue and toilet lines, the holiday season having given the usual impetus to the tissue specialty lines. In the tissue department Ontario manufacturers are facing rather keen competition from German, English and Scandinavian sources which have been making a bid for business in this market and this feature of the business has already been under careful consideration by the tissue section of the Canadian Pulp and Paper Association.

TWINE. — Paper houses in Toronto handling twines report a decided improvement in the demand for cotton twine, one firm declaring that their sales of the past two weeks were greater in volume than for two months previously. This may be due to a possible future reduction in price. The fact remains, however, that five bale orders are now beginning to be booked in place of the half bale hand to mouth buying that has characterized the market for some time past. It is believed in the trade that the twine business has reached a definite turn for the better and that the fall is going to produce good business.

NEWSPRINT. — All of the Ontario newsprint plants are operating at capacity with their output practically all contracted for and a good demand from firms not under contract. It is stated that conferences have been held of late at which the question of future prices were considered with the result that it was pretty generally assured that the current export price level of $80.00 per ton would be maintained. That, at least, appears to be the sentiment existing amongst the manufacturers. It is stated that all of the Canadian mills are operating on a satisfactory basis and are able to take advantage of a far greater market on a competitive basis than would be the case were an advance introduced. It seems quite probable that the $80.00 price will hold for some time yet at any rate.

NEW YORK MARKETS

New York, July 28. — (Special Correspondence) — The "dog days" continue to cast their quieting influence over the paper market. The situation at present is quite characteristic of the midsummer season; orders chiefly involve small amounts of paper, jobbers are buying in a cautious manner from mills, and manufacturers for the most part are regulating their production in proportion to current demand. However, prices are not affected by the limited scope of activity. Consumers seem ready to meet the quotations asked for such supplies of paper as they need and producers and jobbers apparently appreciate that lower prices would fail to induce any more buying, so prices are fairly well maintained, with the tendency in a majority of cases in a higher direction. Raw materials have commenced to rise — some sharp advances have occurred in the past few days on certain kinds of raw stock used in the manufacture of paper and board — and it would appear that if any price changes should develop in the near future they will be upward.

Probably the most encouraging feature of the market this week was the increased inquiry from consuming quarters. There was no material broadening of actual demand, but publishers and other users of paper, presumably deeming it opportune and good business judgment to look ahead a little, directed numerous inquiries to dealers and mills regarding forward supplies of paper and board, which seemed to foreshadow heavier buying. There seems little question that a tremendous potential demand for paper of various kinds is being stored up. It is readily admitted that stocks of consumers and jobbers are down to a low point, and just as soon as requirements increase it will be necessary for buyers to go direct to mills to get paper. The first show of larger consumption therefore should be felt almost at once by manufacturers.

Reports from New England tell of many of the fine paper mills in that section remaining closed on account of the strike of stationary firemen. It is understood that practically all of the plants of the largest writing paper producing concerns in the country in and around Holyoke are shut down, partially if not completely, and other mills also are affected. There has been no change noted in quotations on bonds and ledgers, however. Prices rule very firm and there is a rising tendency, as would be expected with production so greatly reduced, but thus far mills have been enabled to fill commitments from stock and have not altered quotations. Demand for fine papers is moderately active. Orders are principally for small lots, but viewed in the aggregate, a good movement of supplies for this time of the year is in progress.

The demand for news print continues active. Publishers are absorbing contract supplies without any let-up, and it is stated that the new contracts entered into this month covering deliveries over the third and fourth quarters of the year call for larger tonnage than were placed at the beginning of 1923 for the first half of the year. Consumption of print paper doubtless was at a record level for the first six months of 1923, and prospects are that in the second half of the year more newsprint will be consumed than in the first half. At the moment there is less paper being used by newspaper publishers, as is invariably the case during midsummer when display advertising falls off somewhat, but this is having no perceptible effect on the market. Mills are reported running at as lively a rate as earlier in the year, and to be readily disposing of their production.

Inquiries for book paper for delivery later in the year are on the increase, and the market displays a firm undertone. Prices have steadied after showing slight declines several weeks ago, and machine finished book is generally quoted at around 6.50 cents per pound f.o.b. New York, with some mills quoting a quarter to a half cent above this figure. Coated book papers are firm at 8 to 11 cents a pound, depending on the quality.

Wrapping paper is in slight demand; that is, domestic manufacturers are experiencing but little demand excepting from converters, owing to the large available supplies of imported kraft wrapping paper. There is, however, a good movement into consuming channels of the imported product; judging from the tremendous amounts of kraft paper coming into the States from foreign sources there must be a wonderfully active market. Tissues also are seasonably quiet but no changes in quoted prices are reported.

Box boards are moving in a routine and steady way. Paper box manufacturers are ordering as their needs arise, and the busy season for paper boxes has not yet arrived, but boards are enjoying a fairly large demand, mills operating four or five days a week and succeeding in finding an outlet for the bulk of their production. Moreover, prices of boards incline higher, especially since costs of waste paper have sharply adanced during the past few days. Plain chip board is quoted at about $57.50 a ton f.o.b. New York, and news board at $60.

GROUNDWOOD. — Prices of mechanical pulp continue to display a stiffening tone. From all accounts, there is no scarcity of groundwood, yet mill stocks apparently are below normal tonnage and producers are holding unsold pulp with a good deal of firmness, thus creating a firm price situation. Low water is said to be severely handicapping grinders in numerous districts, explaining, of course, why manufacturers are so hesitant about disposing of stocks unless receiving full quoted prices. Around $36 a ton f.o.b. grinding plants is the basis commonly named by domestic producers, and prices substantially above this have been heard in some quarters. Sellers evidently realize that there is every possibility of a scarcity of groundwood developing later in the summer, and they are conserving their supplies to be sure of being able to fill their commitments.

CHEMICAL PULP. — Proof is not lacking that chemical pulp is being purchased in fairly large amounts by paper mills. Some consumers are quite backward in placing orders, presumably figuring that there will be plenty of pulp available should they have need of larger amounts later in the year and that no broad changes in prices are likely to occur, yet other papermakers are looking ahead and are buying pulp reservedly though in comparatively good tonnage. This is assumed on the basis of reports of some fairly large purchases of Scandinavian pulp recently; it being known that paper mills in different parts of the country have placed orders for sizeable lots of sulphite and kraft pulp.

Current demand is principally for unbleached sulphite and kraft. Bleached sulphite is in a quiet market position; there is a routine demand for both foreign and domestic bleached, but consumers are absorbing rather small amounts and it is apparent that importers and domestic producers are granting price concessions to secure business. On the other hand, unbleached sulphite is holding firm in price at about $70 a ton ex dock New York for strong foreign sulphite, while kraft pulp is selling at $67 a ton on the dock for Swedish pulp and at 3.50 cents a pound and higher at pulp mills for No. 1 domestic and Canadian kraft.

Importations have shown a considerable increase of late. This is not unusual at this time of the year, however, since pulp is now being shipped from Sweden against orders placed by paper mills early in the year. It is asserted that importers' stocks on the spot in this country are far lighter than they normally are, particularly of kraft pulp, the statement being made by a leading importer that total stocks of unsold kraft in the U. S. do not exceed 3,000 tons.

RAGS. — The price movement in papermaking rags continues upward and further advances have been scored this week on some kinds of rags. Roofing stock is the strongest class of material at present. Felt paper mills have paid 1.50 cents f.o.b. New York for No. 1 roofing, and 1.35 cents a pound for No. 2 packing, while foreign dark colored cottons have brought 1.50 cents ex dock New York both for spot lots and for forward shipment from Europe. Demand for roofing rags is keen. Certain mills appear to be laying in a supply and are reported gradually advancing their prices. Dealers also place emphasis on the short supply, declaring that rags are not coming in from collection sources in anywhere near normal amounts, which, it is asserted, is a reflection of the shortage of common

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WOOD PULP

SOLE AGENTS IN U. S. A., CANADA, MEXICO AND CUBA FOR

Finnish Cellulose Association
Helsingfors, Finland

AND

Finnish Wood Pulp Union
Helsingfors, Finland

labor and the resultant desertion of the rag business by a great many collectors.

Other grades of rags also are stiffening in price, particularly old whites and blues. Repacked thirds and blues of good quality are fetching 3.25 cents delivered paper mills, while even New York packing of these rags, which is ordinarily of poor quality, is bringing up to 3 cents f.o.b. this city. Miscellaneous thirds and blues are quoted at 2.25 to 2.50 cents per pound at dealers' shipping points, No. 1 miscellaneous whites at 6 cents, No. 1 repacked whites at 7 cents, No. 2 miscellaneous whites at 3.50 cents, and street soiled whites at 2.50 cents. New cuttings are in relatively slow demand, due in part to the shutdown of fine paper mills in New England, but quotations are generally maintained.

PAPER STOCK. Sharp advances have occurred in prices of old paper. Supported by a better demand from consuming quarters, and by limited supplies owing to smaller collections, the market rules very firm, and dealers are almost daily marking up quotations. Low grades in particular are strong. Most dealers in New York are asking a cent per pound or higher for flat folded news f.o.b. this city, while No. 1 mixed paper is quoted at 90 cents a hundred pounds. Old books and magazines are quoted at 2 cents per pound and higher at shipping points, and ledger stock is practically unobtainable at less than 2.10 cents a pound New York. Old No. 1 kraft paper has advanced to 2.25 cents a pound, and dealers are cautious about booking orders as they say this stock is very nearly unavailable excepting in small quantities. Shavings are held by New York packers at 4.25 cents a pound or more for No. 1 hard white, and around 3.35 cents for No. 1 soft white shavings f.o.b. this city.

OLD ROPE AND BAGGING. — Paper mills are still neglecting old manila rope and purchases of this material are reported at cheaper prices, transactions at less than 5.50 cents a pound f.o.b. New York for No. 1 domestic manila rope having been talked of. Dealers contend, however, that stocks are light and that any increase in demand will result in an immediate strengthening of prices. Old bagging is quiet, with No. 1 scrap bagging quoted at 1.15 to 1.25 cents a pound New York, and roofing bagging at around 90 cents a hundred pounds.

PULPWOOD EXPORTS TO U. S. INCREASING

Ottawa, July 26. — That the prospects of an embargo on exports of pulpwood going into effect has induced the American paper making interests to stock up with wood, is quite evident from the pulp and paper export figures for June, which show that exports of pulpwood to the United States totalled 197,544 cords, or an increase of about 150 per cent. over those of June, 1922. During the three months ending June the total shipments to the United States were 385,511 cords, or 185,000 more than during the same period last year. If the rate of shipment attained throughout the current fiscal year, the total will exceed 2,000,00 cords, as compared with about 1,000,000 in an average year.

Disappointment should be taken as a stimulant and never as an opiate.

,*'Every man owes some of his time to the upbuilding of the profession to which he belongs"*

—Theodore Roosevelt

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Exhibitors are making elaborate plans to have this year's exhibit surpass any showing made during previous years.

For further information address National Exposition of Chemical Industries, Grand CentralPalace, New York

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OF CANADA

A Weekly Magazine Devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades

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J. NEWELL STEPHENSON, M. S., Editor.

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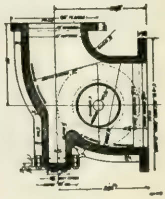

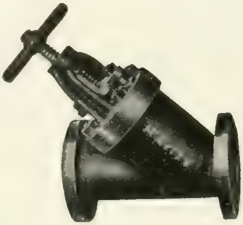

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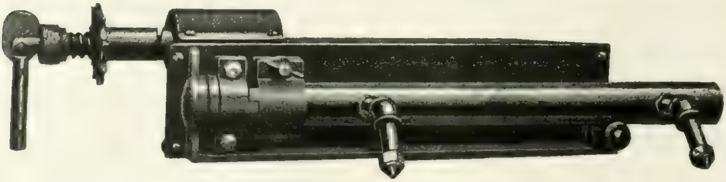

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:-: EDITORIAL :-:

WARREN G. HARDING

The Pulp & Paper Magazine extends sympathy to fellow Americans on account of the death of the President of the United States. The Paper Industry has lost a good friend.

THE EXPORT OF PULPWOOD

Having contributed some parts of the following editorial, we quote it from *The Journal of Commerce.*

We must confess we are rather sceptical as to whether the Dominion Government really intends to do anything very drastic to stop the export of pulpwood. It is not a Government addicted to any very heroic courses, and, in our view, it is going the wrong way about this matter of stopping the export of our raw wood. Of course, as usual, it is terribly afraid of hurting American susceptibilities. This fear may be very creditable to its collective heart, but it says precious little for its collective head. For there is no sort of "reciprocity" of this sentiment. When it suits their purpose the Americans clap on a "High-as-Haman's-Gallows" tariff against Canadian exports without any with your leave or by your leave. But, when it comes to the vital question of conserving our own natural resources the Dominion Government sets about the business with bated breath and whispering humbleness.

The Government's original proposal was to prohibit the export of pulpwood. But a group of United States paper manufacturers started a howl about this, and so the Government postpones enforcement of its prohibition until the matter has been investigated by a Royal Commission, after which exportation of pulpwood may be prohibited "if and when it is considered desirable." Of course, it is readily understandable that the United States papermakers, or some of them, should be greatly perturbed at the prospect of no longer being able to draw their raw materials from this country. So were people engaged in the cattle, produce and grain trade in Canada greatly perturbed when the entire course of their trade was deflected by the prohibitory Fordney tariff. But that did not stop the United States from erecting the tariff wall. And why on earth it should be thought necessary for a Royal Commission to enquire into the desirability of Canada's preserving her own natural resources for her own use it is difficult to understand.

Forest fires and the axe between them have been responsible for a prodigious wastage of our natural wealth of wood — a wastage which is going on at a rate which, if unchecked, will denude this country, within a few years, of one of the richest assets wherewith a bountiful Providence has blessed it. It is plain wisdom for Canada to seek to conserve this asset. In any event, the product should be processed here, thus giving employment to Canadian labor, rather than exported raw for the use of papermakers in the United States which has lavishly squandered its own formerly magnificent resources of pulpwood. It is logical and equitable that the papermaker who depends upon Canadian pulpwood should make Canada the scene of his pulpmaking.

In his speech at East Angus, last Wednesday, Premier Taschereau, in a speech entitled to that careful consideration which is the due of all that proceeds from him, sounded a note of warning anent the proposed embargo. "I ask our friends at Ottawa," he said, "carefully to consider the position before going any further. It is well known that our colonists live for the first few months, and often for the first year, on the proceeds of wood cut on their lots. They must sell the wood, and it is much the same with the farmers. A colonist cannot get a crop at once. The wood is necessary to him, and, therefore, there must be a market for it. They have been making good money, especially of late years, by the sale of the wood they cut on their lots. If exportation of this wood is prohibited by Ottawa, can our colonists find another market that is remunerative as the American market? Can the mills in Quebec absorb all the wood which the colonists cut on their lots, and which they must cut and sell in order to live while awaiting crops? I put the question, and ask our friends at Ottawa to consider it before going any further."

Now with regard to Premier Taschereau's question, "Can the pulp and paper mills of Quebec absorb the wood which is normally cut by farmers and settlers?" the answer is distinctly, yes. We believe it is safe to say that not more than 40 percent of the average total of a million cords of wood exported is cut by farmers and settlers from their own land. The proportion might perhaps run a little higher for Quebec only, and of the total pulpwood exported from Canada probably slightly more than 50 percent comes from the province of Quebec. The consumption of pulpwood in Canada is now approximately 3,000,000 cords per year. We believe it a fair estimate that Quebec mills will use 40 percent of this, or 1,200,000 cords per year. Practically all of this is cut on Crown land, or has been except where local conditions make it possible or necessary to use wood bought from farmers. It seems that we can safely take the amount of wood exported from cuttings by farmers and settlers in Quebec at a maximum of 300,000 cords. This is probably too much, but even this will comprise only 25 percent of the total wood used in Quebec. In order to make a domestic market, then, for all of the settlers' and farmers' wood cut in Quebec, it is only necessary for the Government to restrict cutting operations on Crown lands by 25 or 30 percent of the present allowances. This would not only make a margin for this wood, but it would tend at the same time to maintain the price at a fair level but not necessarily an inflated level such as is frequently brought about by promiscuous and sometimes even frantic bidding on the part of pulpwood buyers from the United States. It seems only fair that if the Government restricts the market of the settler for his wood elsewhere, there should be government action to extend his market at home.

Premier Taschereau went on to point to what he considers another objection to the embargo. "No matter," he said, "what government is in power at Ottawa there is one thing that this province has wanted and will always want, and that is its provincial autonomy. Has the Federal Government the right to say to an individual in Quebec: 'We prohibit you from sending your wood away.' The Federal Government has a right to put on an export tax, and may even make it prohibitive. That is a matter of trade and commerce, but has it a right to prohibit owners of wood from selling their property where they wish? The Privy Council decided that the Federal Government had no right to fix the price of newsprint, since that was a matter of property and civil rights. Would this not also be a matter of property and civil rights? The question is a serious one and I ask our Ottawa friends seriously to consider it from all aspects."

We are free to admit that if the embargo is *ultra vires* Provincial rights, then this point is well taken. We ourselves yield to nobody in upholding the rights of the Provinces as against attempted encroachments by the Federal Parliament. But Premier Taschereau himself suggests the remedy, namely a prohibitive export tax. We are not concerned about the form to be adopted for stopping pulpwood export. But we are concerned that, in the interests of forest conservation, of the workers of Canada and of Canadian industry, such export should be stopped.

WHAT HAS HE DONE ABOUT IT?

Premier King is reported as having expressed himself of the opinion that an embargo on the export of pulpwood should only be instituted as a last resort when all other methods of conserving our forest resources have failed.

We would like to ask what steps the Premier has taken towards the conservation of our forests, or what measures the Federal Government has instituted? Surely the abolishing of the Conservation Commission was not a very active step in forest protection. There has been some very good cooperation on the part of the air force, the surveys and mappings of forest areas, and in scouting for forest fires. This activity, however, is the most logical practice field for an air force which must necessarily be maintained in peace time and kept in efficient working order.

The one big step that the Federal Government could and should have taken is to coordinate the efforts and harmonize the legislation in the various provinces looking towards more effective forest protection. The report of the Director of the Forestry Branch of the Department of the Interior for the year 1921, which has just been issued, mentions a number of instances where cooperation between the Federal Government and one or another of the Provincial Governments has been most satisfactory. It but remains for the Federal Government to constitute itself as the connecting link between all the Provincial Governments and thus bring about more uniformity with regard to forest laws and regulations.

It is ridiculous for the Government to speak of postponing action on the embargo until other methods fail, when they haven't put other methods into effect.

COBWEBS

There is a great celebration on at Sault Ste. Marie this month in honor of the first visit of the early Jesuits and explorers 300 years ago. The officers of the Spanish River Pulp & Paper Mills are taking a very prominent part in the plans for the celebration. It is probable that not a single phase or feature of the day's life, except love and faith, are the same today as they were three centuries ago . The first white visitors to the Soo, should they return now would find a canal to carry enormous ships safely past the rapids, they would find a dam holding back the water in order to generate electrical energy which lights the homes, and drives the street cars and factories; they would find streets to walk on, beds to sleep on, paper to write on, newspapers to read, the telephone, telegraph and radio for long distance communication, the railway train and even the aeroplane for rapid transit. The progress of the human race has been perfectly astounding when one stops a moment to consider the difference between conditions today, and those not so very long ago. A celebration of this kind gives us the opportunity to pause and look back over the trail.

We understand that some of the high grade paper mills in the Holyoke district are now shut down because of a strike of the Stationery Engineers.

In referring last week to the record production of the No. 5 Belgo machine on July 7th, we regret the omission of great credit to Mr. F. McHenry superintendent of the Paper Mill.

American Pulpwoods

The Suitability of Various Species of American Woods for Pulp and Paper Production

By SIDNEY D. WELLS

(Continued from last issue)

THE CEDARS

INCENSE CEDAR — *Libocedrus decurrens.* Wt. 23 lbs. Fiber 2.0m.m.

Range — From Oregon (North Fork of Sanitam River and southward on the Western slopes of the Cascade Mountains through California (Western slopes of Sierra Nevada Mountains and coast ranges from southern border of Mendocino County to San Bernardino, San Jacinto, and Cuyamaca mountains); Western Nevada; Lower California (Mount San Pedro Martir).

Common Names — White cedar (Cal., Oreg.); Cedar (Cal., Oreg.); Incense cedar (Cal., Oreg.); Post cedar (Cal., Nev.); Juniper (Nev.); Bastard cedar (Cal., Wash.); Red cedar; California post cedar (Cal. lit.)

Sulphite Pulp

Yield 920 lbs.

Character — Difficult to bleach; Good strength; Poor color.

Possible uses — Few.

Sulphate Pulp.

Yield 950 lbs.

Character — Strong and hard fiber; Dark colored

Possible uses — As a substitute for white spruce.

PORT ORFORD CEDAR — *Chamaecyparis lawsoniana.* Wt. 26 lbs. Fiber 3.6 m.m.

Range — Coast region from southwestern Oregon (Coos Bay) to California (Klamath River), extending inland about 40 miles.

Common Names — Port orford cedar (Oreg., Cal.); Oregon cedar (Oreg., Cal.); White cedar (Oreg., Cal.); Ginger pine (Cal.); Lawson's cypress (Oreg., Cal.).

Sulphite Pulp.

Yield 1,150 lbs.

Character — Fairly easily pulped; Rather difficult to bleach; Fair strength and color.

Possible uses — Same as white spruce.

Sulphate Pulp.

Yield — 960 lbs.

Character — Difficult to pulp and bleach; Good strength; Hard and fine fiber.

Possible uses — Same as white spruce.

RED CEDAR — *Juniperus virginiana.* Wt. 27 lbs. Fiber 2.8 m.m.

Range — Nova Scotia and New Brunswick to Florida and west in Ontario (Georgian Bay) to Dakota, central Nebraska and Kansas, and Indian Territory. Actual range imperfectly known at present, the supposed Rocky Mountain and Western range being represented by a new, distinct species (J. scopularum Sarg.)

Common Names — Red cedar (N.H., Vt., Mass., R.I., N.Y., N.J., Pa., Del., Va., W.Va., N.C., S.C., Ga., Fla., Ala., Miss., La., Ky., Mo., Ill., Ind., Wis., Iowa., Ohio., Ont., Mich., Minn.); Cedar (Conn., Pa., N.J., S.C., Ky., Ill., Iowa, Ohio); Savin (Mass., R.I., N.Y., Pa., Minn.); Juniper (N.Y., Pa.); Juniper bush (Minn.); Cèdre (La.).

Sulphite Pulp.

Yield — 1,300 lbs.

Character — Difficult to pulp and bleach; Very shivey and dark colored.

Possible uses — Few.

Sulphate Pulp.

Yield — 1,000 lbs.

Character — Difficult to pulp and bleach; Shivey but fairly strong and fine fibered.

Possible uses — Wrappings.

WESTERN RED CEDAR — *Thuja plicata* — Wt. 19 lbs. Fiber 3.8 m.m.

Range — From coast of southern Alaska to northern California (Mendocino County); eastward through British Columbia and northern Washington to northern Idaho (Cour d'Alene, Bitter Root, and Salmon River mountains and Montana; western slopes Rocky Mountains.

Common Names — Red cedar (Idaho, Oreg., Wash.); Canoe cedar (Oreg., Wash.); Arborvitae (Cal.); Shinglewood (Idaho); Gigantic cedar (Cal.); Cedar (Oreg.); Gigantic red cedar (Cal. lit.); Western cedar; Gigantic or Pacific red cedar (Cal. lit.); Lobb's arborvitae (in cult. Eng.); Pacific red cedar (Cal. lit.).

Sulphite Pulp.

Yield — 830 lbs.

Character — Difficult to bleach; Dark colored but fair strength.

Possible uses — Few.

Sulphite Pulp.

Yield — 830 lbs.

Character — Rather difficult to bleach; Fair strength.

Possible uses — Same as white spruce.

SOUTHERN WHITE CEDAR — *Chamaecyparis thyoides.* Wt. 20 lbs. Fiber 2.1 m.m.

Range — Coast region from southern Maine to northern Florida and westward to Mississippi (Pearl River).

Common Names — White cedar (Mass., R.I., N.Y., N.J., Pa., Del., N.C., S.C., Fla., Ala., Miss.); Swamp cedar (Del.); Post cedar (Del.); Juniper (Ala., N.C., Va.).

Sulphite Pulp.

Yield — 1,000 lbs.

Character — Fairly easy to pulp; Rather difficult to bleach; Fair strength and color.

Sulphate Pulp.

Yield — 780 lbs.

Character — Readily pulped; Difficult to bleach; Hard and fine fiber.

Possible uses — As a substitute for spruce.

BALD CYPRESS — *Taxodium distichum.* Wt. 27 lbs. Fiber 3.3. m.m.

Range — From southern Delaware (Sussex County and southward in the coast region) to Florida (Mosquito Inlet and Cape Roman); westward in the Gulf coast region to Texas (Devils River); and northward through Louisiana, Arkansas, and eastern Mississippi and Tennessee, southeastern Missouri, western and northwestern Kentucky, southern Illinois, and southwestern Indiana (Nnox county).

Common Names — Bald Cypress (Del., N.C., S.C., Ala., La., Fla., Tex., Ark., Mo., Ill., Ind.); White Cypress (N.C., S.C., Fla., Miss.); Black cypress (N.C., S.C., Ala., Tex.); Red Cypress (Ga., Miss., La., Tex.); Swamp Cypress (La.); Cypress (Del., N.C., S.C., Fla., Miss., Ky., Mo., Ill.); Deciduous Cypress (Del., Ill., Tex.); Southern Cypress (Ala.).

Sulphite Pulp.
Yield — 1,160 lbs.
Character — Difficult to cook; Very difficult to bleach; Poor strength and color.
Possible uses — Few.

Sulphate Pulp.
Yield — 1,350 lbs.
Character — Fiber long but tender.
Possible uses — As a substitute for white spruce.

REDWOOD — *Sequosia sempervirens* — Wt. 23 lbs. Fiber 5.5 m.m.

Range — From the southern borders of Oregon (on Chetco River (about six miles from mouth, and on Winchuck River), and southward in the coast region (twenty to thirty miles inland) through California (to Salmon Creek Canyon, twelve miles south of Punta Gorda, Monterey County).

Common Names — Sequoia (Cal.); Coast Redwood (Cal.); Redwood (Ca' and Am. lit.); California redwood (Eng. lit.).

Sulphite Pulp.
Yield — 1,100 lbs.
Character — Easily pulped; Difficult to bleach; Fair strength; Dark colored.
Possible uses — Low grade wrappings.

Sulphate Pulp.
Yield — 950 lbs.
Character — Long fibered but tender.
Possible uses — As a substitute for spruce.

THE- HEMLOCKS

CAROLINA HEMLOCK — *Tsuga caroliniana.* Wt. 30 lbs. Fiber—

Range — Mountains of southwestern Virginia, western North Carolina, and northern Georgia; very local.

Common Names — Hemlock (N.C., S.C.); Southern hemlock (lit.).

Sulphite Pulp.
Yield — 1,290 lbs.
Character — Fairly easily pulped; A little hard to bleach; Good strength and fair color.
Possible uses — As a substitute for white spruce.

Sulphate Pulp.
Yield — 1,260 lbs.
Character — Good strong pulp.
Possible uses — As a substitute for white spruce.

Mechanical Pulp.
Probably the same as hemlock.

HEMLOCK — *Tsuga canadensis.* Wt. 24 lbs. Fiber 3.0 m.m.

Range — Nova Scotia to Minnesota (Carleton County), Wisconsin, Michigan, and southward in the Atlantic region along the mountains to Northern Alabama (Winston county) and Georgia.

Common Names — Hemlock (Me., N.H., Vt., Mass., R.I., Conn., N.Y., N.J., Pa., Del., Va., N.C., S.C., Ky., Wis., Mich., Minn., Ohio, Ont.); Hemlock spruce (Vt., R.I., N.Y., Pa., N.J., W.Va., N.C., S.C., England, cult.); Spruce (Pa., W.Va.); Spruce pine (Pa., Del., Va., N.C., Ga.); Oh-neh-tah — "Greens on the stick" (N.Y. Indians); Canadian hemlock, (lit.); New England hemlock (lit.)

Mechanical Pulp.
Yield — 1,080 lbs.
Character — Not easily pulped; A little hard to bleach; Good strength; Fair color.
Possible uses — As a substitute for white spruce.

Sulphate Pulp.
Yield — 1,150 lbs.
Character — Good strong pulp.
Possible uses — Similar to white spruce.

Mechaical Pulp.
Yield — 2,030 lbs.
Character — Short fiber; Pinkish color.
Possible uses — As a substitute for white spruce.

WESTERN HEMLOCK — *Tsuga heterophylla.* Wt. 23 lbs. Fiber 2.7 m.m.

Range — Alaska to Idaho and Montana and southward (in the Cascade and coast ranges) to California (Marin County).

Common Names — Hemlock spruce (Cal.); Western hemlock (Cal.); Hemlock (Oreg., Idaho, Wash.); Western hemlock spruce (lit.); California hemlock spruce; Western hemlock fir (Eng.); Prince Albert's fir (Eng.); Alaska pine (Northwestern lumbermen.)

Sulphite Pulp.
Yield — 1,050 lbs.
Character — Easily pulped; Easily bleached; Good strength; Fair color.
Possible uses — Same as white spruce.

Sulphate Pulp.
Yield — 1,100 lbs.
Character — Good strong fiber.
Possible uses — Similar to white spruce.

Mechanical Pulp.
Yield 2,160 lbs.
Character — Good strength and fiber; Grayish color.
Possible uses — Similar to white spruce.

THE LARCHES

TAMARACK — *Larix laricina.* Wt. 31 lbs. Fiber 2.6 m.m.

Range — From Newfoundland and Labrador to northern Pa., northern Indiana, Illinois, central Minnesota, and northwestward to Hudson Bay (Cape Churchill, Great Bear Lake, and Mackenzie River) (in Arctic Circle.)

Common Names — Larch (Vt. Mass., R.I., Conn., N.Y., N.J., Pa., Del., Wis., Minn., Ohio, Ont.); Tamarack, (Me., N.H., V.T., Mass., R.I., N.Y., N.J., Pa., Ind., Ill., Wis., Mich., Minn., Ohio, Ont.); Hackmatack (Me., N.H., Mass., R.I., Del., Ill., Minn., Ont.); American Larch (Vt., Wis., nurserymen); Juniper (Me., N. Bruns. to Hudson Bay); Black larch (Minn.); Epinette rouge (Quebec); Ka-neh-tens — "The leaves fall" (Indians, N.Y.; Red Larch (Mich.); Hacmack (lit.).

Sulphite Pulp.

Yield — 1,270 lbs.

Character — Difficult to pulp; Difficult to bleach; Good strength; Poor color.

Possible uses — Low grade wrappings.

Sulphate Pulp.

Yield — 1,400 lbs.

Character — Strong, tough pulp.

Possible uses — Similar to white spruce.

Mechanical Pulp.

Yield — 2,620 lbs.

Character — Short fibered and gray color.

Possible uses — As a substitute for white spruce.

WESTERN LARCH — *Larix occidentalis.* Wt. 28 lbs. Fiber 2.6 m.m.

Range — Southern British Columbia (south of latitude 53 degrees) and south in the Cascade Mountains to the Columbia River and to western Montana; also in Blue Mountains of Washington and Oregon.

Common Names — Tamarack (Oreg.); Hackmatack; Larch (Idaho, Wash., etc.); Red American Larch; Western Tamarack; Western larch (Eng.); Great Western Larch (Cal. lit.).

Sulphite Pulp.

Yield — 1,200 lbs.

Character — Difficult to pulp; Difficult to bleach; Poor strength and color.

Possible uses — Low grade wrappings.

Sulphate Pulp.

Yield — 1,290 lbs.

Character — Good quality of kraft fiber.

Possible uses — Same as white spruce.

Mechanical Pulp.

Yield — 2,100 lbs.

Character — Brown color, short fiber and fair strength.

Possible uses—Where a medium quality of groundwood will answer the purpose.

THE POPLARS AND WILLOWS

ASPEN — *Populus tremuloides.* Wt. 23 lbs. Fiber 1.0 m.m.

Range — Southern Labrador to Hudson Bay (southern shores) and northwestward to the Mackenzie River (near mouth and Alaska (Yukon River); southward to Pa. (mountains), northeastern Missouri, southern Nebraska, and throughout the western mountains to northern New Mexico and Arizona and central California; Lower California (San Pedro Martir Mountains) and Mexico (mountains to Chiuahua).

Common Names — Aspen (N.H., Mass., R.I., Conn., N.Y., N.J., Pa., Del., Ill., Ind., Wis., Mich., Minn., N.Dak., Nebr., Ohio, Ont., Oreg., Utah, Idaho, Nev., Mont., Colo., Cal.) Quaking Asp (N.Y., Pa., Del. Cal., N.Mex., Idaho, Colo., Ariz., Ill., Iowa, Minn., Mont., Nebr., Utah, Oreg., Nev.); Mountain Asp. (Mont.); American Aspen (Vt.); Aspen Leaf (Pa.); White Poplar (Mass.); Trembling Poplar (Minn., Col.); American Poplar (Minn., Colo.); Poplar (Vt., N.Y., Ill., Ind., Minn., Mont.); Popple (Wis., Iowa, Mont.); Tremble (Quebec); Trembling Aspen (Iowa); Aspen Poplar (Cal., Mont.).

Sulphite Pulp.

Yield — 1,030 lbs.

Character — Easily pulped; Easily bleached; Very weak; Excellent color.

Possible uses — Used with longer fibered stock for better grade of papers.

Soda Pulp.

Yield — 1,080 lbs.

Character — Easily bleached; Soft and short fibered.

Possible uses — When bleached and mixed with longer fibered bleached stock is well adapted for book, envelope, and high grade printings.

Mechanical Pulp.

Yield — 2,170 lbs.

Character — Poor strength; Short fibered; Good color but may have black specks present.

Possible uses — As a filler when used with longer fibered stocks.

BALM OF GILEAD — *Populus balsamifera.* Wt. 26 lbs. Fiber 1.0 m.m.

Range — Coast of Alaska and valley of Mackenzie River (latitude 60°) to Hudson Bay and Newfoundland; southward to northern New England and New York (Taughannock Falls, Cayuga Lake), central Michigan, and Minnesota, Dakota (Black Hills), northwestern Nebraska, northern Montana, Idaho, Oregon, and Nevada.

Common Names — Balsam (N.H., N.Y., Wis., Mich., Minn., Nebr., Mont., Ohio, Ont.); Balm of Gilead (Me., N.H., Vt., Mass., R.I., Conn., N.Y., Mich., Nebr., Minn., N.Dak., Ont.); Cottonwood (Idaho); Poplar (Wis., Minn.); Balsam Poplar (N.H., Vt., Nebr., Minn.); Tacamahac (Minn.); Baumier (Quebec); Rough-barked poplar (Hudson Bay region.)

Sulphite Pulp.

Yield — 1,300 lbs.

Character — Easily pulped; Easily bleached; Excellent color.

Possible uses — Same as aspen.

Soda Pulp.

Yield — 1,170 lbs.

Character — Easily bleached; Short fiber and soft.

Possible uses — Same as aspen.

Mechanical Pulp.

Similar to aspen.

COTTON WOOD — *Populus deltoides.* Wt. 23 lbs. Fiber 1.3 m.m.

Range — From Quebec (Lower Maurice River) and Vermont (Lake Champlain) through Western New England and New York, Pa. (west of Alleghenies), Maryland, and Atlantic States to western Florida and west to the Rocky Mountains from southern Alberta to northern New Mexico.

Common Names — Cottonwood (N.H., Vt., Mass., R.I., N.Y., N.J., W.Va., N.C., Ala., Fla., Miss., La., Tex., Cal., Ky., Mo., Ill., Wis., Kans., Nebr., Iowa, Minn., Mich., Ohio, Ont., Colo., Mont., N. Dak., S. Dak.); Big cottonwood (Miss., Neb.); Yellow cottonwood (Ark., Iowa, Neb.); Cotton-tree (N.Y.); Carolina poplar (Pa., Miss., La., N. Mex., Ind., Ohio); Necklace poplar (Texas, Colo.); Vermont poplar (Vt.); Whitewood (Iowa); Broad-leaved cottonwood (Colo.).

Sulphite Pulp.

Yield — 1,035 lbs.

Character — Easily pulped; Easily bleached; Very weak; Excellent color.

Possible uses — Same as aspen.

Soda Pulp.

Yield — 1,030 lbs.

Character — Soft and easily bleached.

Mechanical Pulp.

Yield — 2,180 lbs.

Possible uses — Same as aspen.

Character — Weak, short fibered, good color.

Possible uses — As a filler when used with longer fibered stocks.

LARGE TOOTH ASPEN — *Populus grandidentata.* Wt. 22 lbs. Fiber 1.1 m.m.

Range — Nova Scotia through New Brunswick, southern Quebec and Ontario to northern Minnesota; southward to Delaware (and along the Allegheny Mountains to North Carolina, central Kentucky and Tennessee), southern Indiana, and Illinois.

Common Names — Large-toothed aspen (N.J., Pa., Del., S.C., Mich., Minn.); Poplar (Me., N.H., Vt., Mass., R.I., Conn., N.Y., N.J., Pa., W. Va., N.C., S.C., Ga., Ill., Ohio); Large-toothed poplar (N. C.); Large poplar (Tenn.); White poplar (Mass.); Popple (Me.); Large American aspen (Ala.).

Sulphite Pulp.

Yield — 1,000 lbs.

Character — Easily pulped and bleached; Very weak but excellent color.

Possible uses — Used with longer-fibered stock for better grade of papers.

Soda Pulp.

Yield — 1,000 lbs. opaque.

Character — Easily pulped and bleached; Soft, opaque, and short fiber.

Possible uses — Same as aspen.

Mechanical Pulp.

Same as aspen.

NORWAY POPLAR. Probably cottonwood. Pulping tests the same as for cottonwood.

YELLOW POPLAR — *Liriodendron Tulipifera.* Wt. 26 lbs. Fiber 1.8 m.m.

Range — From Rhode Island to southwestern Vermont and west to Lake Michigan (through southern Michigan as far north as Grand River); south to Florida, southern Alabama, and Mississippi, west of Mississippi River in southeastern Missouri and adjacent Arkansas.

Common Names — Tulip tree (Vt., Mass., R.I., Conn., N.Y., N.J., Del., Pa., Va., W. Va., D.C., N.C., S.C., Cal., Ark., Ky., Ohio, Ind., Ill., Ont.); Whitewood Vt., Mass., R.I., Conn., N.Y., N.J., Del., S.C., Ky., Ohio, Ill., Mich., Ont.); Yellow poplar (N.Y., N.J., Pa., Del., Va., W. Va., N. C., S.C., Ala., Ark., Ky., Ohio, Ind., Mo.); Tulip poplar (N.J., Del., Pa., S.C., Ill.); West Virginia poplar (Pa., Del., Md., W. Va.); Poplar (R.I., Del., N.C., S.C., Fla., Ohio); White poplar (Pa., Ky., Ind.); Blue poplar (Del., W. Va.); Hickory (Va., W. Va., N.C.); Popple (R. I.); Cucumber tree (N.Y.); Canoe wood (Tenn.); Old Wife's Shirt-tree (Tenn.); Ko-yen-ta-ka-ah-ta — "White-tree" (Onandaga Indian, N.Y.); Basswood (Ohio).

Sulphite Pulp.

Yield — 1,170 lbs.

Character — Easily pulped; Difficult to bleach; Poor color.

Possible uses — As a substitute for aspen.

Soda Pulp.

Yield — 1,150 lbs.

Character — Soft, opaque and easily bleached.

Possible uses — Same as aspen.

Mechanical Pulp.

Same as aspen but slightly stronger.

BASSWOOD — *Tilia americana.* Wt. 21 lbs. Fiber 1.1 m.m.

Range — New Brunswick to Virginia and (along Allegheny Mountains) to Georgia and Alabama (mountains); west (in Canada) to Lake Superior (eastern shores) and to Lake Winnipeg (southern shores) and Assiniboine River (in United States), to eastern Dakota, eastern Neb., Kansas, Oklahoma, and eastern Texas.

Common Names — Basswood (Me., N.H., Vt., R.I., Mass., Conn., N.Y., S.J., Del., Pa., W. Va., D.C., N.C., S.C., Ga., Ala., Miss., La., Ark., Ky., Iill., Ind., Iowa, Wis., Mich., Ohio, Ont., Neb., Kans., Minn., N. Dak.); American linden (Me., N.H., R.I., N.Y., Pa., Del., W.C., Miss., Ohio, Ill., Neb., N. Dak., Ont., Minn.); Linn (Pa., Va., W. Va., Ala., La., Ill., Ind., Ohio, Mo., Iowa, Kans., Nebr., Wis., S. Dak.,); Linden (Vt., R.I., Pa., W. Va., Nebr., Minn.); Limetree (R.I., N.C., S.C., Ala., Miss., La., Ill.); Whitewood (Vt., W. Va., Ark., Minn., Ont.) Beetree (Vt., W. Va., Wis.); Black limetree (Tenn.); Smooth-leaved limetree (Tenn.); White Lind (W. Va.); Wickup (Mass.); Yellow basswood (Ind.); Lein (Ind.).

Soda Pulp.

Yield — 1,020 lbs.

Character — Soft and easy bleaching.

Possible uses — Similar to aspen.

Mechanical Pulp.

The same as aspen.

BLACK WILLOW — Salix nigra. Wt. 21 lbs. Fiber 0.8 m.m.

Range — New Brunswick to southern Florida and west to eastern Dakota, Nebraska, Kansas, Oklahoma, southern Arizona, and south into Mexico. In California from the Sierra Nevada to Colusa County, and Sacramento River to Arizona).

Common Names — Black willow (N.H., Vt., R.I., N.Y., Pa., Del., S.C., Fla., Ala., Miss., La., Tex., Ariz., Cal., N. Mex., Utah, Ill., Wis., Mich., Minn., Nebr., Kans., Ohio, Ont., N. Dak.); Swamp willow (N.C., S.C.); Willow (N.Y., Pa., N.C., S.C., Miss., Tex., Cal., Ky., Mo., Nebr.).

Sulphite Pulp.

Yield — 1,100 lbs.

Character — Easily pulped; Easily bleached; Very weak; Excellent color.

Possible uses — Same as aspen.

Soda Pulp.

Yield — 950 lbs.

Character — Soft and easily bleached .

Possible uses — Similar to aspen.

Mechanical Pulp.

The same as aspen.

(To be Concluded)

STEAM ACCUMULATORS

By M. EMANAUD

(Translated from "La Technique Moderne", xv, 193-197 (April 1, 1923) and 237-241 (April 15, 1923), by A. Papineau Couture

(Continued from last issue.)

Bell Accumulators — We shall also mention an entirely different type of accumulator, similar to a gas meter and working under approximately constant pressure. As example we shall describe the accumulator installed at the Carl pit of the Kölner Bergwerksverein, consisting of a cylindrical bell 8 meters in diameter resting in a water-sealed cylindrical tank, and having a vertical displacement of 7 meters. The bell is guided in its course by a metal framework, and is loaded so as to maintain an interior pressure of 1.025 to 1.035 atmospheres.

The steam enters in the center of the base, and is withdrawn through a vertical pipe which opens at a point near the summit of the bell when it is in its lowest position. Live steam automatically keeps up the pressure when the bell is right down and there is not enough steam fed to the accumulator to maintain the pressure.

This type, as compared with the ones containing a large mass of water, possesses the advantage of a more constant pressure, and consequently has less effect on the running of the engines from which it draws its steam. On the other hand, for a given volume it can store up less heat than the water type of accumulators, and it has not been developed to the same extent as the latter.

Ruths Accumulator — During the last few years the Swedish engineer Ruths has directed his attention to the construction of large capacity accumulators working under high pressures. The following installations can be mentioned:

1) A 345 cubic meter accumulator installed in 1920 at the Kaukas cellulose mill, in Finland. It consists of a cylinder 17.5 meters long and 5 meters in diameter.

2) A 456 cubic meter accumulator, consisting of 2 cylinders 4 meters in diameter and 19.2 meters long, installed at the electric station at Malmoë, Sweden, and working between the pressure of 10 and 7 kilos per square centimeter. It has a thermal capacity of 36,000 kilos of steam.

3) An important installation at the Lauchhammer power station in Germany. It consists of a 700 cubic meter accumulator made up of two cylinders each 5 meters in diameter and 19.5 meters long. It has a very large capacity, but there is no reason why even much greater capacities should not be reached. It is used for facilitating the handling of the daily peak in producing electric power, and we shall refer to it again further on.

These accumulators, shown in Fig. 10, are cylindrical shells constructed of mild steel plate with hemispherical ends. They are almost completely filled with water, and are heavily lagged with a 100 mm. thickness of Kieselguhr, or its equivalent, as they are usually placed outdoors. They are mounted on supports which allow them to expand freely. The steam is distributed by means of diffusers which cause circulation and ensure uniform temperature throughout.

In the type shown in Fig. 10 steam enters at A. The set of valves S_1 being shut and the set S_2 being open, the steam goes through B and reaches the diffusers at C. When it is necessary to withdraw steam, S_2 is closed, S_1 is opened, and the steam is withdrawn from the dome of the accumulator through A. The steam is drawn off through suitable nozzles to prevent entrainment of water, which might be caused by rapid evaporation when the pressure falls rapidly. The water level is quite high, the shell being normally 90 to 95 per cent. full. In certain cases a specially designed superheater, described in "Stahl und Eisen" of June 15, 1922, can be used in conjunction with the Ruths accumulator.

The various accessories, valves, manometers, etc., are normally grouped together for convenience; while those which cannot be so arranged are electrically controlled from the same place.

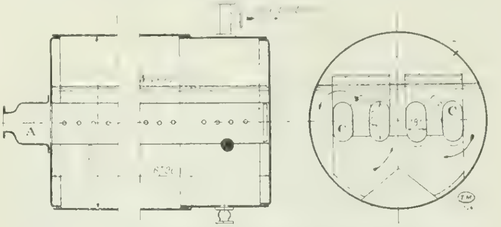

FIG. 10. — Coupe longitudinale d'un accumulateur Ruths.
Longitudinal and cross sections of a Ruths accumulator

Comparison of the Various Types

We need not give any more description of the various kinds of apparatus; the examples furnished are sufficient to show what forms they can take.

It is interesting to compare them from various standpoints: possible speed of discharge, proper operation during discharge, dryness of the steam furnished, effect on the running of the machines from which they derive their steam, radiation losses, ease of operation, attention required, their life, cost, etc.

For instance, the bell type lend themselves to more rapid changes in load because the necessity of having a uniform temperature is not so great; lack of uniformity in the temperature does not limit, or even stop completely, the storing of the steam, as would happen in a condensation accumulator. Also, we have seen that the bell type, owing to the constant pressure under which they work, have much less effect on the operation of the machines from which they derive their steam. On the other hand, they are generally bulkier than the water type, as the condensation of the steam in the latter reduces the volume occupied in the ratio of the specific volumes of steam and of water. But this advantage is not as great as might appear at first sight, for the water type of accumulator necessarily contains a considerable volume of water which is not converted into steam when the apparatus is discharged. The conclusion might even in certain cases be reversed if we considered only the area covered by the accumulator.

The water type of accumulator is easier to insulate and requires less attention than the bell type owing to the fact that the bell is movable. An accumulator of the water type which has been properly designed to ensure uniform temperature and prevent too violent ebullition is very reliable and it can be operated at a distance.

The dryness of the steam from the accumulator depends not only on the regularity of the ebullition and the rate of evaporation, but also on the loss in pressure which it may undergo if it goes through a reducing valve.

Manners of Utilizing Accumulators

The installations which we have described above are merely particular instances of what has been done; but the scope of usefulness of the steam accumulator is much wider, and it is worth while looking into the various manners in which it can be used. And these different methods of utilization can be combined together in many ways so that there is a very great variety of possible types of installations.

We shall now consider the steam accumulator in turn as:

1) An independent water and steam storage for a single boiler;

2) A common storage for a battery of boilers;

3) An accumulator for exhaust steam;

4) An intermediate pressure regulator when steam is used in several stages;

5) A regulator between steam from various sources on the one hand, and various machines using the steam on the other;

6) An accumulator properly so-called, which allows of taking care of peak loads in power stations;

7) A thermal accumulator;

8) A steam regenerator;

9) A transformer which allows steam to be generated under conditions entirely different from those under which it is utilized (especially for production at a very high pressure);

10) A flow regulator in large condensing stations.

Case 1. — This is the simplest and the one which we considered at the beginning of this article. It is a separate water storage for large capacity boilers, which gives in the same installation the advantages of fire tube and of water tube boilers. It is separate from the boilers and is not heated directly; but this does not prevent using flue gases to protect it against radiation losses, even though the gases are not brought directly in contact with the shell of the accumulator. It is easy to construct and requires but little attention and upkeep, and its connections with the boiler are such that they can be modified by merely operating a few valves. Though variations in the water level in the boiler require watching they are of no importance in the accumulator.

It protects the boiler against sudden changes in load for a period of time proportional to its capacity, so that the boiler is called upon to face only slow variations in the steam demand and there is time to change the rate of combustion in passing from one set of conditions to another. Steam generators for fireless locomotives fall in this class.

The accumulator can be used as a feed water heater, as we have already seen, the water being fed to the boiler by gravity if the accumulator is mounted over the boiler. The advantage of such an arrangement is readily seen.

Let Q be the weight of steam per hour generated by the boiler when operating under normal conditions. Suppose that for a certain time O_1 the steam consumption per hour is q_1, which is smaller than Q. During this time we can accumulate an amount of heat equal to

$$\theta_1 L_T (Q-q_1)$$

in which L_T is the latent heat of vaporization of water at temperature T corresponding to the working pressure. Now, let us use this heat by condensing the weight of steam $Q-q_1$ at T and heating a weight of water P from t to T^0. We then have the relation

$$L_T (Q-q_1)\theta = Pc\,(T-t)$$

in which c is the average specific heat of the water between T and t. Hence

$$P = \frac{L_T}{c}(Q - q_1)\frac{\theta_1}{T - t}$$

Suppose, now, that the steam demand becomes greater than the hourly production Q. The cold water is shut off, and only the water in the accumulator, at T^0 is used. If the rate of combustion is not altered the same amount of heat will be absorbed by the boiler, namely (since it received water at t^0) $Q((T-t)c + L_T)$, and the weight of water q_2 which can be evaporated from and at T^0 is such that

$$q_2 L_T = Q((T-t)c + L_T)$$

whence

and this weight of water can be evaporated until the whole weight P in the accumulator has been evaporated, i. e., for a time θ_2 such that

$$q_2\theta_2 = P.$$

Consequently, the demand q_2 can be met for a time θ_2 and the combination can be proportioned and the weight P chosen so that a variable demand can be met by means of a uniform production.

This arrangement combines the advantages of water tube boilers with those of large capacity boilers. Pressure can be got up very rapidly by cutting off the accumulator. Incidentally, dryer steam is obtained because separators are more easily used; the scaling of the heating surface is decreased; there is a smaller loss of hot water when blowing down the boiler to clean it, etc.

(To be Continued)

LARGE TIMBERLAND SALE IN MAINE

More than 20,000 acres of timberland in the town of Vanceboro, Me., were sold last month to W. D. Hutchings and H. L. Pushon of Augusta, Me., and William B. Kendall of Bowdoinham, Me. The price paid was not given out, but it is said to have been in excess of $200,000, making it the largest timberland transfer of the year in Maine. The timberland was sold by Jerome Butterfield of Kingman and John A. Weatherbee of Bangor.

Do not make a friend of a man whom you would regret to see married to your sister, if you had one.

Woodlands Section

QUEBEC WELCOMES THE FORESTRY CONFERENCE

When the Imperial Forestry Conference returned to Quebec on August 3, after a tour of New Brunswick, the Province and city of Quebec entertained the visitors with inspection of points of historic and religious interest, and a dinner at the Garrison Club. On Saturday the party proceeded to Berthierville for an inspection of the Provincial Nurseries and thence to Ottawa via Montreal. The current week is taken up with the business items and discussion of topics on the Agenda.

In the course of his address at the Garrison Club, which is reported in The Star, Montreal, Premier Taschereau said:

I bid you, and particularly our distinguished visitors from distant shores and neighboring lands, a most hearty welcome to the old City of Quebec.

We still remember, my Lord (Lord Lovat.) your stay in our midst in 1908, when you joined with us in celebrating the tercentenary of the birth of our city, and we are pleased to notice that you did not await the next similar celebration to return to us. We hope, however, that you will attend it provided you give us an occasional call in the interval.

Canada, while these fifteen years have drifted to the past, has grown wonderfully. New problems have arisen and the great war has left in its path not only sorrow in 60,000 homes, but the difficulties and obstacles that any young country, in the period of its early development, has to face and conquer.

Shall we master them? Despondency and defeat are words unknown to the Canadian dictionary. And rest assured that Quebec, with her natural resources, magnificent rivers, fertile fields, boundless forests, with her peaceful, sturdy, law-abiding and progressive people, will do her full share in keeping up our fair name, progress and credit.

Co-incident with the commencement of this conference, a friend of Canada and of the province of Quebec has started in a daily paper a series of articles under the caption "A National Danger."

The writer of these articles, who is no friend of this Government, although he hails from Three Rivers — and that section of the province has been liberally treated by the Government — lays all the blame on the provincial authorities for the recent fires that have unfortunately destroyed so much of our wealth of timber.

A Few Facts

Our friend from Three Rivers brazenly states that the Government has done nothing to protect the forests that we are quiet spectators of the destruction that is going on, that within a short period all our forests will be destroyed and that our colonization policy is destructive of any progressive forest policy we might adopt.

I pray, gentlemen, do not be alarmed. I will not talk politics but I wish to lay before you a few facts, and will then leave it to you and to the public to draw conclusions. The question is too important, too national, too vital to our province, to drag it into the political arena.

You will allow me to simply make a statement of facts, that will show you how unfair it is to accuse men entrusted with the administration of this province of having failed to realize the importance of our forests and the necessity of preserving them, not only for the actual benefit of our people but for the welfare of future generations.

First, remember that our timber berths are not sold outright, but leased.

A restriction is imposed as to the diameter of the trees that may be cut, thereby insuring the preservation of trees for generation purposes.

In 1910, an Order in Council was passed prohibiting the export of pulpwood from licensed land, with the result that numerous pulp and paper industries have been established in our province.

Ever since that year, regulations and laws have been adopted which all aimed at protecting the forests, and securing the greatest possible efficiency in our Department of Lands and Forests. And I am glad to be able to compare my administration on that point with that of my able predecessor, Sir Lomer Gouin.

Only a few years ago, forests and colonization lots were managed by the same department. We separated them, feeling that the old conflict of interests between holders of timber limits and colonists would thus disappear. They have, in a large measure. During two years 25,000 lots have thus passed from the Crown Lands Department to the Colonization Department.

Our policy is to group settlers and keep them as far away as possible from the timber limits. In view of what has been going on in this province for the past fifty years, this program requires time, but will be accomplished.

Six of our best men have been sent to Europe to study forestry and its preservation. We will send some more.

Our intention is, after the inventory that is now being taken of our timber wealth is completed, to control the cut so that only the annual growth will be removed from the limit, thus making it perpetual.

Our friend from Three Rivers has also forgotten to tell the public all about our forestry school, which has given such good results. And he would not mention, naturally, the immense works we have performed to facilitate the driving of logs on our rivers.

Reason For Fires

But what about fires? Everybody knows that the three last seasons have been unusually dry with the result that many fires were started in the forests and caused great destruction.

It should be kept in mind, however, that these fires were not confined to Quebec. While approximately 500,000 acres were burnt here last year, President Harding publicly stated that over 12,000,000 acres had the same fate in the United States.

Even in France, where they have 4,000 trained forest rangers and a most efficient organization, where forests are more scattered than here and all well provided with roads and firelanes, and where the most rigid regulations prevail in respect to forests, in July and August, 1921, owing to a persistent drought, they could not prevent a large number of most disastrous forest fires.

Let me add that such a great fire as that which destroyed our Temiscaming district last year came from Ontario. This year many fires originated in New Brunswick and Maine and crossed the border.

Our friend from Three Rivers claims that last year we paid a niggardly $3,000 to a company to help stop fires. Why is he not loyal enough to state that the Government spent $318,000 last year in fighting forest fires? This year the amount used for that purpose may run into the half million.

In spite of all the displeasure we were bound to incur from settlers and others, we took upon ourselves to close the forests to all comers when drought made the danger of fire more imminent.

Notwithstanding the repeated and vehement protests of settlers, we have adopted and maintained a regulation forbidding settlers to start a fire without first obtaining a permit from a Government officer.

Quite a few have disobeyed the law. So have all of you when driving your expensive limousines at an excessive speed. Many settlers have been fined, others sent to jail. We are told that the fine is not heavy enough. It is today $200. If a judge imposes a fine of only $25, is it the fault of the Government? Are we going to substitute ourselves for the law courts of this province?

Bear in mind, I pray, that this Province is above all agricultural. Unless colonization progresses, the Province cannot prosper. We cannot and will not sacrifice colonization to timber operations. Both should progress hand-in-hand. Limit holders and settlers are not and must not be enemies. There is room enough in Quebec for these two great assets, and our aim is to establish between them an entente cordiale that is possible and practicable. Such an entente is the interest of both.

We are trying to help our colonists. Seventy thousand posters are continually recalling to them the danger of fire. Circulars have been read from the pulpit in every parish church warning them against the setting of fires. Illustrated lectures have been delivered. Fifty thousand calendars and 400,000 postcards have been circulated with this one end in view: prevention of forest fires.

To the Canadian Forestry Association we give an annual grant of $1,000 to help it to carry out, by means of its forestry magazine, an educational campaign in behalf of forest conservation. In the province of Quebec, a French publication called ''La Vie Forestière et Rurale'' is being circulated to show our population the importance and necessity of preserving and wisely exploiting our forest resources.

The limit holders have formed among themselves protective associations: 85 per cent of them have joined. Their object is to fight fires. We pay a dollar for every dollar they spend. We made this agreement with them who are most interested in protecting their limits, and they should have cause to be satisfied.

In 1920, we established in the Lake St. John district, at Roberval, a hydroplane station in connection, not only with forest inventory work, but also with the detection of forest fires. For the maintenance of this station we pay annually $10,000.

In 1920, the personnel of the forestry service was 734. It is today 1,500. Some days ago, when fires were raging, 5,000 men were in the bush fighting the flames, and we passed legislation enabling us to compel every man to become a fire-fighter.

If the timber wealth of the Province was being destroyed as stated, with annihilation in sight, do you believe that British and American capital would pour in this Province, to join Canadian capital and erect these great pulp and paper mills which would never be built if they had not a forest reserve for at least fifty years to come?

The men behind these immense and costly undertakings are not children. They are familiar with the conditions and possibilities of our province and would not invest millions and millions of dollars, if the future was as black as it has been painted.

They have confidence in our province, and they may rest assured, together with all our limit-holders, that this Government will co-operate with them to the fullest extent in order to protect our great national asset, the forests.

We are open to all suggestions and ready to receive the advice of men of good will, of experience, and imbued with a true Canadian spirit, who place these vital questions above the petty overflows of the petty imaginations of petty politicians.

CANADA, EMPIRE'S WOODYARD

By ROBSON BLACK, Manager

The Canadian Forestry Association

Of the total area of forests in the British Empire, Canada holds over 50 per cent. India has 14 per cent., and Australia and New Zealand about 8 per cent.

Seventy-five per cent of the forest area of the Empire belongs to the people and only 25 per cent. to corporate bodies and private individuals. In Canada alone more than 85 per cent. of the forest area is public owned.

The Canadian people gain from their forest possessions the enormous revenue of $500,000,000 a year, representing the production of all branches of our forest industries.

More than 100,000 men are engaged in Canada converting forest products into wealth in some form or other. Nearly 400,000 other people depend on this forest army for their food and shelter.

In the pulp and paper mills are 33,000 men, drawing $40,000,000 a year in wages. The lumber industry pays 55,000 men $60,000,000 wages annually. These are but two industries out of a score that are directly dependent on a forest supply.

The Canadian people cause 4,000 forest fires a year through recklessness. The burned material represents many times what is utilized by all the industries from coast to coast.

NEWFOUNDLAND PAPER DEBENTURES

A cable from London to the *Wall Street Journal* says: ''Underwriting has been completed for the Newfoundland Power & Paper £2,000,000 4½% Class A mortgage debentures at 95, guaranteed by British Government, which will be followed shortly by £2,000,000 5½% Class B mortgage debentures, guaranteed by Newfoundland Government.

INSTITUTE ITEMS

EDUCATIONAL SURVEY BY T. A. P. P. I.

This survey, in a 72 page pamphlet, has been given wide distribution as a guide for the use of the text books. Now that the books are being distributed, the pamphlet is used in connection with the text books, to give the workers themselves preliminary hints as to the manner in which the books are to be used with these same workers as the pupils.

One of the early definite steps taken, was for the holding of foremen's training conferences, the first being held at a southern mill, the Champion Fibre Company's plant at Canton, N. C. The conferences for foremen were later organized in other mills, always with the co-operation of the state and federal supervisor of vocational education, and the latest to be reported was a joint conference in Portland, Oregon, for the Pacific Coast foremen.

Meanwhile, the first two text book volumes were published. They are chiefly of a preliminary character, to give basic training in mathematics, chemistry, to provide a foundation on which future technical instruction could be given. The mathematical problems, however, were based on paper and pulp mill conditions, tying the whole work into a paper and pulp mill type of special training. Even before the appearance of the third volume, the first devoted to real technical training in the industry, classes were being organized for study. A typical example was that of the Strathmore Paper Company, of Mittineague, Mass., where George E. Williamson, president of the Technical Association, is an official, and where arrangements were made to have class work given by the Massachusetts Department of University Education. Here, the company purchased the text books for all workers who wished to register for the various courses. The books were sold to the employees at cost, and the price taken from their wage envelopes in small installments. The provision was made, however, that any employee successfully completing the courses would be refunded all that he had paid for the books, and would be permitted to retain them.

In Massachusetts the State University Extension Department has arranged to give correspondence courses. These, it is announced, are confined to residents of the state. Other mills in other parts of the country soon began to organize classes for the training of their own employees.

The next step in the progress of the work was the formulation of plans for joint instruction in paper making localities of employees of different mills. Up in Wisconsin individual mills were securing state university assistance, but in the Miami Valley of Ohio the manufacturers organized to plan joint classes for all employees, and the work is still in progress toward the development of such instruction, both in Ohio and other states.

In New York, with the largest number of mills of any state, a surprising difficulty was found. The state college of forestry at Syracuse, with paper making courses in its curriculum, and a highly developed extension department, found itself unable to undertake the work now successfully under way in other states, through state educational agencies. This handicap, however was not allowed to impede the progress of the industry in the greatest of the paper making states. Cornell University, though not a state institution, has been interested, together with the forestry department of the state college of Agriculture, located at Cornell, and the state and private colleges in that institution have tentatively agreed to meet the request of the paper industry to provide education for the mill workers.

Such steps as these have provided the routine methods of teaching the workers in the paper and pulp industry through organized classes. Another step, however, remained in the providing of education for the isolated workers where there were individuals interested, but not in sufficient numbers to warrant the formation of classes.

This problem has been met through the offering of correspondence courses on both sides of the Canadian boundary. In Canada, the Institute of Industrial Arts of Gardenvale, Quebec, has undertaken to handle correspondence courses for the paper mill workers, and its courses have been formally approved by the Canadian Pulp and Paper Association. In the United States, the University of Wisconsin has organized a course, with the approval of the Technical Association, a course in which the United States Forest Products Laboratory, located at Madison, the Seat of the University, will co-operate. The course of the Wisconsin Extension Department will be available to students in other states

With this program now actually under way, teaching of pulp making, as outlined in the third of the five volumes of text books, in progress, the campaign of the paper industry to train its workers can be said to have been fairly launched. The training of 150,000 workers is a great task. The organization of the preparatory work steps to a point where actual class room instruction is now being given, has been no light duty.

The paper industry, however, can congratulate itself on the fact that its persistence has been such, its vision so broad, as to make possible the carrying on without interruption of three years of work, before any results could be apparent.

PULP & PAPER COURSE GOOD FOR FORESTERS, TOO

The Chief Forester of a large Canadian pulp and paper mill says, "I think one should take advantage of this opportunity to become acquainted with every branch of the industry in which he is engaged, regardless of the fact that it has no immediate bearing upon his present work. I believe that those connected with the woods operations will make progress in woods administration if and when they understand better the needs and the possibilities of the manufacturing end. That is the reason I undertook the course."

NO SMOKING!

Cigar and cigarette butts, hot ashes from a pipe, and lighted matches carelessly thrown away, are responsible for one-half of the fire losses in Canada.

LOOK

Before crossing the street, first to the left, then to the right. Be sure of SAFETY before stepping off the sidewalk.

Fatalities teach lessons but the victims never benefit, don't be a victim.

Technical Section

REVIEW OF RECENT LITERATURE

Cellulose and Lignin

A-1 The Question of Determining Cellulose with Phenol. L. KALB and V. SCHOELLER. **Cellulosechimie** 4, 37-40 (May 27, 1923). Phenol in the presence of small amounts of mineral acids readily dissolves the incrustations on plant fibers. The reaction is rapid at the water-bath temperature of 97° C. and the yields are constant. With the removal of lignin, a hydrolysis of certain polysaccharides in the plant material also occurs. The reaction is not suitable for determining the total carbohydrates, but under definite experimental conditions, besides removing the lignin, the hemicelluloses and pentosans can be separated. This procedure is superior to the drastic method of König. Comparative tests with spruce wood gave, in percentages of crude cellulose, 58 with the Cross and Bevan method, 48.3 with the phenol method, and 36.5 with the König method. percentages were 52.2, 46.1 and 36.2 respectively. 75% of the total pentosans in the wood are removed by the phenol method. It consists in the following: 4 of finely divided sample, after extraction, after extraction with acetone and dried at 96° C. are placed in a large test tube with 50 g. of dry, fused phenol. For wood, enough concentrated hydrochloric acid is added to give 0.1% HCl content, based on the phenol, and the tube is placed in a water-bath for 1 hr. at 97° C. The mass is then added to a large quantity of water containing sufficient sodium hydroxide to neutralize the acid and dissolve the phenolic compounds. The residue, after filtering, is washed with water, with dilute acetic acid, again with water and dried.-J.L.P.

A-3 Paper Making Tests with Various Plants from Indo-China. VIDAL and ARIBERT. **Congress Production Coloniale Marseille** 1922, 100-116. **Rice Straw.** The material, in 3 to 5 cm. lengths, was charged in a spherical rotating boiler, steamed 1 hr. at 1 to 2 atmospheres' pressure, cooked 5 hr. at 3 kg. per sq. cm. with 13% caustic soda (on bone-dry straw) as a 5° Bé liquor, washed and defibered simultaneously using a fine-meshed washing drum, and bleached with 16% of bleaching powder (as 4° Bé. liquor) giving 30% of pulp containing some unbleached raw shives. After careful beating, owing to the fineness and softness of the fibers, it was engine sized and loaded with starch, and run on the paper machine with some trouble due to sticking at the presses, giving a sheet with the following characteristics: thickness 0.1 mm., weight 88 g. per sq. m., breaking length in machine direction 2,450 m., in cross direction 1,868 m., average 2,159 m., bursting strength 0.950 kg. folding resistance very low. It is especially suitable as a filler pulp like esparto **Imperata Cylindrica,** P. Beauv. **èImperata arundinacea** (Cyrill.). (See Groud, **Pulp & Paper** 20, 2022, Dec. 21, 1922; **Paper Trade J.** 75, No. 25, 57, Dec. 21, 1922. **Bamboo:** Nodes were removed and the internodes repeatedly put through a laboratory crusher until they were practically the same size as esparto, cut into 5 to 6 cm. lengths, charged into a rotary boiler, steamed for 2 hr. at 1 to 2 kg. per sq.cm., cooked 7.5 hr. at 4 to 4.5 kg. sq. cm. with 15% of caustic soda as 6° Bé. liquor, washed and defibered simultaneously, bleached with 16% of bleaching powder and 0.3% of sulphuric acid, and washed very thoroughly, giving a 40% yield. It was beaten, engine sized and slightly loaded with starch, and run on the paper machine without any trouble giving a sheet with the following characteristics: thickness 0.1 mm., weight 56 g. per sq. m., color light cream, formation slightly wild, breaking length in machine direction 3.357 m., in cross direction 1,955 m., average 2, 656 m., bursting strength 1.06 kg. It is soft and strong and would be suitable as a printing paper. The micrographic characteristics of all the pulps are described in detail.-A.P.-C.

A-3 Sugar Cane Bagasse and Rice Straw as Paper Stock. HACHIRO KUMAGAWA and KANCHIKI SHIMOMURA. **Paper** 32, No. 2, 7-10 (May 2, 1923). The sulphite method can give with bagasse a light yellow pulp which is difficult to bleach but the fibers of which are strong and have good felting qualities, giving a paper of excellent quality. By the sulphate process it is possible to prepare a highly bleached pulp in good yield from crude bagasse. The sulphite process is suitable for the digestion of rice straw, the pulp containing about the same percentage of ash as the raw fiber (about 14%). The ash content of the pulp does not interfere with its paper making qualities. Rice straw is much easier to pulp by the sulphate process than is bagasse. The pulp contains up to 12.5% of ash, for which there may be two plausible explanations: either the combination of the silicic acid and the cellulose matter of the straw is so strong that the action of the alkali is not strong enough to destroy it; or, more likely, the colloidal silicic acid dissolved in the waste liquor is so strongly absorbed by the pulp that it is not removed by ordinary washing. The ash can be reduced to 2% by treatment with dilute caustic soda. The ash acts as a good filler and is not detrimental to the quality of the paper.-A.P.C.

A-3 F-5 Process for Treating Fibrous Materials for Paper Making. C. Weygang. Eng. pat. 1920, 185, June 16, 1921. — Fibrous materials, particularly wheat and oat straw, are steeped at ordinary temperature for 12 to 24 hr. or are boiled, preferably under low pressure, for 3 to 6 hr. in a liquor prepared by adding 8 parts of an alkali salt such as sodium carbonate or sulphate, to a thin paste containing 8 parts of lime and 1 to 4 parts of a mineral or other crude oil. Afterwards the treated material is rinsed with water and converted into paper pulp by the usual method.-A.P.-C.

A-3 K-4 Manufacture of Cotton Substitutes. B. POSSANER VON EHRENTHAL. Eng. pat. 156,710, Jan. 7, 1921. — Cottons suitable for the manufacture of paper are obtained from various plants and waste such as linseed, straw, jute, reeds, nettles, potato haulm, willow bark, etc. The fibrous material is steeped for

3 to 6 days in water at 30 to 50° C. and allowed to ferment until incrusting substances are partially decomposed. It is then thoroughly washed in water, hydrolyzed by treatment for several hours with dilute solutions containing free mineral acid or organic acids, or their acid salts, at temperatures not exceeding 40° C., washed free from acid, and afterwards treated with dilute solutions of alkalis at temperatures not exceeding 50° C. for one or several days, whereby the fibrous material is "opened up" into flexible fibers which are then thoroughly washed and dried at low temperature.-A.P.-C.

A-3 Pulp from Sedges, Grasses and Cat-Tails. JOHANN J. GAHLER. Ger. pat. 370, 347. **Papierfabr.** 21, 185-186 (Apr. 1, 1923). The plant materials are given a preliminary steaming and then subjected to a mechanical disintegration to separate the pith. Subsequently the raw fibers are ground in water to free the elementary fibers.-J.L.P.

A-3 Manufacture of Paper. VERWERTUNG IN LANDISCHER PRODUKTE. Ger. pat. 370,421 **Papierfabr.** 21, 186 (Apr. 1, 1923). The root fibers of aquatic reeds and cat-tails are used for the manufacture of paper. The starch in the root fibers is used for sizing. -J.L.P.

A-3 Production of Pulp for the Manufacture of Paper. HEINRICH EGGERS and ADOLF BURLIN. Ger. pat. 375,034. **Papierfabr.** 21, 263-264 (May 13, 1923). Comminuted stalks and leaves of lupines, as well as pods and shells of vegetables, are cooked under 2 to 3 atmospheres pressure with 2% sodium hydroxide solution and afterwards treated with 4 to 6% chloride of lime solution and a sodium carbonate solution.-J.L. P.

A-3 K-4 Paper and Cardboard from Peat. A. LAMBRETTE. **Papeterie** 44, 781-786 (Sept. 10, 1922); 921-925 (Oct. 25, 1922); 962-969 (Nov. 10, 1922); 1073 (Dec. 10, 1922); 1109-1113 (Dec. 25, 1922); 45, 19-22 (Jan. 10, 1923); 158-165 (Feb. 25, 1923); 314-318 (Apr. 10, 1923). A discussion of the economic possibilities of using various grades of peat for the manufacture of pulp and paper, with a description of a large number of experiments on a semi-commercial scale carried out with alkaline, acid and mixed processes of treatment, and a description of the products obtained.-A.P.-C.

A-15 The Reducing Power of Cellulose of Various Origins. M. N. KOMAROFF. **Bumazhnaia Promyshlenost** (Russia), I, Nos. 2-3, 228-236 (Sept.-Dec. 1922) A review of the present knowledge relating to cellulose, the hemicelluloses and the compound celluloses. Muller's titrometric method used for the determination of the reducing power of sugar has been tried and found satisfactory for use on cellulose. This method gives at once the "corrected copper value" of cellulose. The following data were collected from various authorities: purified cotton, corrected copper value in per cent (A) -0.2 to 1.8, hydrolysis number in percent (B) - 2.7 to 3.3, unbleached sulphite, A-0.5 to 2.0; B - 3.5 to 6.0 bleached sulphite, A - 1.5 to 3.96, B - 5.6 to 8.0; mercerized cotton, A - 1.9, parchment from cotton, A - 1.9; to 7.1 B - 17.6; Guignet cellulose A 10.76; B - 7.26; Flechsig's amyloid, A - 18.36, B - 26.67; hydrocellulose, cotton and wood, A - 3.6 to 8.8, B - 6.6; oxycellulose, cotton and wood, A - 5.8 to 33.2; cotton dextrose, A - 160.2. The following were obtained by the author at the Government Paper Testing Station of Moscow: Purified cotton, copper value (A) - 0.51%; unbleached sulphite, imported, A - 2.30; bleached sulphite, imported, A - 2.75; unbleached soda, A - 2.04; semi-bleached sulphite, domestic, A - 2.56; mercerized sulphite, A - 2.38; purified cotton, English, A - 1.44; same mercerized, A - 1.05; sulphite, cooked with salenium, cook No. 1, A - 3.28; cook No. 2, A - 2.94; cook No. 3, A - 3.55.-M.L.C.

A-15 Hydrocellulose II. Decomposition of Cellulose by Oxalic Acid. EMIL HEUSER and FRITZ EISENRING. **Cellulosechemie** 4, 13-21 (Apr. 8, 1923); 4, 25-31 (Apr. 23, 1923). The yields of hydrocellulose, prepared by the action of hydrochloric acid according to Knoevenagel and Busch, decrease with the time although the solubility in sodium hydroxide is the same in all cases. The yield and reaction velocity are greatly influenced by the amount of water present: increase of moisture diminishes the yield of hydrocellulose and brings about a progressive decomposition. Hydrocellulose, when subjected to a secondary hydrolysis (with dilute sulphuric acid), becomes much more reactive and is easily converted to glucose. The decomposition products of the primary hydrolysis (with hydrochloric acid) are only dextrines. Highly concentrated with hydrochloric acid changes hydrocellulose quantitatively to glucose. Upon treating with sodium hydroxide, hydrocellulose goes into solution as an alkali compound having the composition $C_{12}H_{20}O_{10}.2NaOH$. Under definite conditions a hydrocellulose can be be prepared from viscose by oxalic acid which is identical with the one prepared by hydrochloric acid; under other conditions yields up to 65% of glucose are obtained. The yield in glucose is limited owing to the formation of an isomeric oxymethyl-furfurol. Oxalic acid reacts with hydro-cellulose to give larger quantities of these two substances, while with cellulose the yields are smaller. Oxalic acid will, however, progressively decompose cellulose similar to mineral acids. J.L.P.

A-15 Calculation of True Lignin Values. ASTRID CLEVE V. EULER. **Cellulosechemie** 4, 21-22 (Apr. 8, 1923). Corrections are given for the previously published method of the author for calculating true lignin values from empirical figures as obtained by the 72% sulphuric acid method. The empirical value, based on the wood previously extracted with benzol and alcohol, is decreased by 3.7 units to compensate for loss of acetyl groups and sulphur absorbed. The resulting figure is calculated to fat—, ash—, and protein-free wood dried at 102° C. but containing the alcohol-soluble lignin. To this is added the per cent of alcohol-soluble lignin, which has been corrected to the same basis as the value in the preceding sentence. The average true lignin value of nine tests is given as 28.2%.-J.L.P.

A-15 Some Derivatives of Straw Lignin. F. PASCHKE. **Cellulosechemie** 4, 31-32 (Apr. 22, 1923). Straw lignin boiled with aniline in the presence of oxalic acid gave a condensation product of the approximate formula $C_{58}H_{60}N_3O_{10}$. Lignin treated with sulphur and sodium sulphide gave a sulphur dyestuff of the formula $C_{36}H_{40}S_6O_{21}$. These reactions indicate that straw lignin has four methoxyl groups and probably four hydroyl groups. Tanning experiments proved the aldehydic character of the lignin; spent liquor from a soda cook converted a hide into soft, brown leather; waste sulphate liquor, made alkaline by addition of soda, caused the hide to become very brittle.-J.L.P.

(Continued on page 803.)

CHAS. WALMSLEY & CO. (CANADA) LIMITED

One of the latest examples of the establishment of Canadian branch works of English manufacturing houses is Charles Walmsley & Co. (Canada) Limited who have recently taken over the plant at Longueuil on the South side of the St. Lawrence River, immediately opposite the city of Montreal, which was formerly operated by Armstrong Whitworth of Canada Limited, a branch of the world renowned engineering firm of Sir W. G. Armstrong Whitworth & Co. Limited.

The activities of the Armstrong Whitworth Company of England, before and during the war were, to very large extent, connected with armaments and the equipment generally of Naval and Military forces. With the termination of the war and the universal demand for the reduction of armaments this Company found it necessary to embark on other enterprises in order to find employment for their very large capital and extensive works.

Sir WILLIAM PRICE

One of the new industries in which they decided to engage was Hydro Electric and Civil Engineering and, realizing how intimately this work is connected with the Pulp and Paper industry, arrangements were made to absorb Charles Walmsley & Co. Limited of Bury, England, the well known manufacturers of paper making machinery. This was followed by the conversion of the Armstrong Whitworth works in Canada from the manufacture of steel to the construction of paper and pulp machinery under the name of Charles Walmsley & Co. (Canada) Ltd., and the sending to this Country of a large and well qualified engineering staff from the Walmsley Works in England.

The greater part of the common stock of the Canadian business is held by Sir. W. G. Armstrong Whitworth & Co. Ltd. while an additional $1,000,000,00 has been provided by a public issue of bonds, in this country, which are supported by the unconditional guarantee of Sir W. G. Armstrong Whitworth & Co. Limited.

The Company is determined not to repeat the mistake which has sometimes been made of attempting to control the business entirely from England and has therefore placed the control in the hands of a Board of Directors consisting of prominent Canadian business men assisted by three Directors in London representing the English Parent Companies.

The General Manager of the Company is Mr. Harry Kay who for many years has been associated with the Walmsley Company in England in addition to having a large experience of Canadian methods gained during several years connection with Messrs Price Brothers & Co. Limited of Quebec.

Mr. HARRY KAY

Mr.. John Wolstenholme, the Managing Director of Charles Walmsley & Co. Ltd., of Bury, England, and also Director of the Canadian Company, will visit the Canadian Branch at frequent intervals, thereby assuring uniformity of product and the closest cooperation between the two businesses.

The reconstruction of the works is proceeding rapidly and it is anticipated that operations will be in full swing in about two months. The Company will then be producing complete paper and board machines of the famous Walmsley design, the new Magazine Grinder invented by J. J. Warren of Brownville, N. Y. the Watford Engineering Company's Tremor Screen and Gwynne's Centrifugal Pumps. The Company will also act as selling agents for all the products of Sir W. Armstrong Whitworth & Co. Ltd.

The new Company will therefore be in a position to supply the complete equipment of a pulp and paper mill including the hydro electric power plant, the

Mr. JOHN WOLSTENHOLME

structural steel work for buildings, the electrical apparatus, roll grinders and general machine shop equipment all of which are manufactured by the Parent Company or its subsidiary undertakings.

The Directors and Officers of the Company are as follows:—

President, Sir William Price. President of Price Brothers & Co. Limited.

Vice-President and General Manager. Mr. Harry Kay, formerly of Charles Walmsley & Co. Ltd., Bury, England.

Other Directors.

Mr. F. H. Anson, Vice-President of the Abitibi Paper Co.

Hon G. G. Foster, of Foster, Mann, Place, McKinnon, Hackett & Mulvina.

Mr. H. B. Walker, Montreal Manager of the Canadian Bank of Commerce.

Mr. H. Harrison, Financial Secretary of Sir W. G. Armstrong Whitworth & Co. Limited.

Mr. D. Spencer, Manager of the Hydro Electric Department of Sir W. G. Armstrong Whitworth & Co. Limited.

Mr. J. Wolstenholme, Managing Director of Charles Walmsley & Co. Ltd, of Bury, England.

Secretary-Treasurer. Capt. Daniel H. Haigh A.C.A. formerly assistant to the Financial Secretary of Sir W. G. Armstrong Whitworth & Company Limited.

Assistant Works Manager. Mr. J. Scholes, formerly of Charles Walmsley & Co. Ltd. Bury.

J. M. McCARTHY FOR CABINET

Quebec — In semi-official circles, Mr. J. M. McCarthy, vice-president of Price Brothers, and director of several public utility companies, is mentioned as Irish representative in the Taschereau Cabinet. His appointment will be made some time before the session, according to the information.

Special Pulping Processes

K-4 R-12 Cost of De-inked Newspaper Paper Trade J. 76, No. 21, 58 (May 24, 1923). Figures obtained in a mill de-inking 40 tons of newspaper stock a day showed a cost of $32. for producing one ton of de-inked newspaper pulp.-A.P. C.

K-4 Paper Pulp from Flax Tow. R. E. RINDFUSZ and V. VOORHEES. U. S. pat. 1,430,115, Sept. 26, 1922. A high grade paper pulp is prepared by cooking tow under pressure with the lime solution to soften the shive material, removing the alkaline solution and treating the material with nitric, hydrochloric or sulphuric acid and completing the removal of the ligneous shive material by another alkaline treatment. A.P.-C.

K-4 De-inking Waste Paper. T. JESPERSEN assignor to Lincoln Trust Company. U.S. pat. 1,424,411, Aug. 1,1922. Printer's ink containing a mineral oil vehicle is removed from paper by the action of a sodium silicate solution with or without the addition of slaked lime.-A.P.-C.

K-4 Material for Paper Manufacture. S. KAWAMURA. Jpn. pat. 38,450, Apr. 15, 1921. Cortex of the Mulberry tree and other trees are decomposed with reducing bacteria having the power of decomposing pectin, such as **B. pectinoborus**, etc.-A.P.-C.

K-4 Pulp from the Mulberry Tree. J. TAKAMURA and H. MICHIOKA. Jpn. pat. 38,491, Apr. 23, 1921. Branches and twigs of the mulberry tree are crushed mechanically, immersed in a mixture of wash water from rice and sodium carbonate solution, treated with vinegar or dilute acetic acid in a closed vessel, steamed, and boiled with caustic soda solution. A good pulp in 62% to 65% yield is produced.-A.P.-C.

K-4 Pulp from Pinetree Leaves. T. TABE and Y. TABE. Jpn pat. 38,602, May 9, 1921. Leaves of pine tree are immersed in a 0.2% to 0.5% slaked lime solution, boiled, beaten and boiled in a closed vessel, a mixture of 0.07% to 0.1% sulphur dioxide, air and carbon dioxide is introduced under a pressure of 30 to 40 lb., the pulp is beaten and bleached.-A.P.-C.

K-4 Apparatus for Disintegrating and De-inking Waste Paper. M. C. J. BILLINGHAM. U.S. pat. 1,420,-362, June 20, 1922. The printed stock is injected upwardly through a vertical nozzle against a perforated baffle which effects disintegration.-A.P.-C.

K-4 Paper from Cedar Bark. R. KAJIMURA. Jpn. pat. 37, 641, Dec. 11, 1920 — 37.5 kg. of cedar bark are boiled with 4 lb. of caustic soda, 1 lb. soda ash, 1.5 kg. of lime and water, for 3 hr. The product is beaten and manufactured into paper without washing and sizing.-A.P.-C.

K-4 The Conversion of fibrous Raw Material to Pulp and Textile Fibers. CARL G. SCHWALBE. **Zellstoff U. Papier** 4, 73-76 (Apr. 1923). A general article on the chemical processes involved in the manufacture of pulp or textile fibers from seed fibers, bast fibers, grass and wood. The methods in which chlorine is used are reviewed. A commercially useful fibrous raw material must contain at least 30% cellulose; it should not be bulky and should be easy to collect. A plea is made for the application of the principles of colloid chemistry to the study of the chemical problems connected with the industry.-J.L.P.

K-4 The Economical Utilization of Old Paper. ANON. **Papierfabr.** 21, 177-180 (Apr. 1, 1923); 21, 189-191 (Apr. 8, 1923). A general article on the subject.-J.L.P.

BOARD OF TRADE SUMMARY OF SALES TAX

The Sales Tax Act has been issued by the Government. The Department of Customs & Excise will soon publish the regulations governing the methods of collecting the tax. The following admirable summary of the Act has been issued by the Montreal Board of Trade. The Act comes into force on Jan. 1 next:—

Definitions

Licensed Manufacturer. —A manufacturer or producer who manufactures or produces goods to the value of $10,000 or more during any fiscal year ending 31st March. It is necessary for every such manufacturer or producer to take out an annual license. The penalty for neglecting to do so is a sum not exceeding $1,000.

Licensed Wholesaler. —A wholesaler or jobber who sells not less than 50% of his total sales to a licensed manufacturer or producer to be used in, wrought into, or attached to, articles to be manufactured or produced for sale. A wholesaler or jobber may be granted a license on application to the Minister of Customs. Upon a wholesaler or jobber applying for a license it will be necessary for him to give security by bond of an incorporated guarantee company, whose bonds are acceptable to the Dominion Government, or by depositing Dominion of Canada bonds for an amount not less than twice the amount of the Sales Tax computed for a three months' period of total sales, such bond being security that the wholesaler or jobber shall keep adequate books or accounts and shall render true statements of sales to licensed manufacturers or producers and others.

Unlicensed Manufacturer. —One who does not manufacture or produce goods to the value of $10,000 during any fiscal year.

Unlicensed Wholesaler. – One who does not sell 50 % of his annual sales to a licensed manufacturer or who does not take out a license.

Sale Price. —The price before Sales Tax is added thereto.

General

Application. —A Sales Tax of 6 per cent is imposed on the sale price of all goods produced or manufactured in Canada, including the amount of Excise Duties when the goods are sold in bond, payable at the time of sale, and on the duty paid when taken out of warehouse. The Sales Tax shall not apply:

(*a*) On goods exported.

(*b*) On goods sold by one licensed manufacturer to another licensed manufacturer, or to a licensed wholesaler.

(*c*) On goods imported by a licensed manufacturer or by a licensed wholesaler.

(*d*) On goods, principally foodstuffs, which are exempted from the Sales Tax now in force and on the following additional items:— Manuscript; Raw Furs; Wool, not further prepared than washed; Drain Tiles for agricultural purposes; Syrups; enumerated in Customs Tariff, Item No. 140.

When goods are sold by a licensed manufacturer or a licensed wholesaler to an unlicensed wholesaler or jobber, the purchaser shall be furnished with a written invoice of the goods sold, which invoice shall state separately the amount of the Sales Tax.

When goods are sold by an unlicensed wholesaler or jobber to a licensed manufacturer, the purchaser shall be furnished with a written invoice which shall state separately the amount of the Sales Tax.

Refunds. —A refund or deduction of the amount of the Sales Tax may, with the consent of the wholesaler, jobber or dealer, be granted to a licensed manufacturer or producer on goods purchased from a wholesaler, jobber or other dealer if such goods are to be used in, wrought into, or attached to articles manufactured or produced for sale by a licensed manufacturer and which are articles subject to the Tax..

A refund of the amount of the Sales Tax may be granted to a licensed manufacturer or a licensed wholesaler in respect of goods which he has on hand on the first day of January, 1924, if such goods have been, or are to be used in, wrought into, or attached to articles to be manufactured or produced for sale and which are articles subject to the Sales Tax, such deduction not to exceed the amount actually paid by the said manufacturer or wholesaler, no deduction to be allowed in respect of such goods not accounted for prior to the thirty-first day of March, 1924. Claims for such deduction must be presented to the Department of Customs and Excise with complete evidence on or before the thirtieth day of June, 1924, otherwise same shall be rejected.

When goods are imported free of duty there may be granted a refund not exceeding 25% of the Sales Tax on similar goods after having shown to the Minister of Customs that such Canadian goods are at a disadvantage in competition with goods imported free of duty.

Deductions. —A deduction from the Sales Tax may be granted in respect of goods sold at a fixed price by bona fide contract and sale made before the twelfth day of May, 1923, and still in force at time of delivery of goods, provided that such deduction shall not exceed the difference between the amount of the Sales Tax calculated at the rate in force on the eleventh day of May, 1923, of the amount of the Sales Tax paid or to be payable under the present Act. No such deduction shall be made in respect of goods delivered after the thirty-first day of March, 1924. Claims for such deductions must be presented to the Department of Customs and Excise with complete evidence before the thirtieth day of June, 1924, otherwise the same shall be rejected.

BROMPTON CO. PAYS DIVIDEND ARREARS

Directors of the Brompton Pulp & Paper Co., at a meeting held at Sherbrooke, declared a dividend of four per cent payable August 15, to perferred share holders of record, July 31 and a dividend of two per cent, payable August 31, to shareholders of record July 31. This action clears off the arrears on the issue and takes care of the current quarter. Yesterday's declarations make a total of 14 per cent declared on the preferred stock since April 19, when an initial declaration of two per cent, was made on account of arrears, then amounting to 12 per cent. This development leaves the common stock, upon which five per cent was earned in 1922, in much enhanced position from a market point of view. The balance sheet produced last February showed a marked improvement in working capital position, current assets exceeding current liabilities by nearly two million dollars as of December 31.

PULP AND PAPER NEWS

The subject of pulpwood and woodpulp has been added to the list of questions to be discussed at the Imperial Economic Conference to be held in London in October.

Work has been commenced on a concrete dam at the St. Jerome mill of the Rolland Paper Company, Limited. This will replace a wooden dam and will give the Company additional water power.

Mr. C. Howard Smith, president of the Howard Smith Paper Mill, Limited, has returned from a holiday at Prouts Neck, Maine.

Mr. Geo. M. McKee was a visitor to Montreal last week. He states that the opening of his mill at Ogdensburg has been postponed until September, owing to the delay in the arrival of machinery.

The lumber trade of Eastern Canada has slackened, with prices of soft and hardwoods a little easier. American firms purchased heavily during the last three months, and are now slowing up. Having regard to the extensive buying of the new cut, and the probable demand during the balance of the year, it is held that prices will not react to any extent. The supplies are not excessive, and the mills are holding out for their prices.

The Western Quebec Paper Mills, Limited, Montreal has been incorporated with a capital of $250,000. The mill, which is under construction at St. Andrews, Que., will produce high grade, light weight papers.

Mr. S. J. B. Rolland, president of the Rolland Paper Company, Limited, returned to Montreal last week after a three months' visit to France, Switzerland and Italy. Mr. Rolland was accompanied by Mrs. and Miss Rolland. He states that business in France is slowly recovering; men are working hard—harder than before the war. The people are endeavoring to consume French commodities, in preference to buying foreign goods, in order to make the balance of trade favorable to their country. Switzerland is prosperous, while Italy has undergone a change which is distinctly favorable. The Government is now in strong hands, which have prevented a revolution. In Mr. Rolland's opinion, Canada could do more trade with Northern Italy, although he thinks that there is little or no opportunity for paper exports to Italy or to France.

Mr. Brian R. Perry, formerly with P. Lyall & Sons Construction Company, has joined the staff of the MacKinnon Steel Company, Limited, of Sherbrooke, Que. and is in charge of the Company's Sales Office at 404 New Birks Building, Montreal, from which office he will handle all business in Montreal and vicinity. Mr. Perry is a graduate of McGill University and has had extensive experience in construction work.

Excellent progress is being made on the new waxed paper plant of Bradshaws, Limited, which is being erected at the corner of Adrian Street and Symington Avenue, Toronto. W. J. Trimble, the contractor, expects to hand over the building by September 1 and within a short time after that the plant will be in operation.

Something new in the crepe paper novelty line is being handled by Davis & Henderson, manufacturing stationers, King Street, Toronto, in the form of sandals made from crepe tissue and they are meeting with ready sale. It is a line akin to the paper towels, the sandals being worn by milady as she issues from her bath and proceeds to her boudoir. The firm reports the novelty as catching on well and good sales are being made.

Toronto and Hamilton printers will send a team each to the Printers' International Baseball Tournament to be held at the Polo Grounds in New York City from August 4 to 11. Toronto was the only Canadian entry at last year's tournament in Cleveland. This year's team will be selected from the various union printing offices in the city and will include at least seven players now playing in the senior leagues of Toronto.

Secretary W. A. Sutherland, of the Toronto Typothetae, has sent a letter to the members with advice to job printers to collect sales tax, irrespective of the decision in the Crain case at Ottawa. Since the Government continues to demand payment of the tax and since it has been decided to appeal the Crain case, it is held that the tax should be collected until further notice is received to the contrary. It is stated that the Typothetae is acting under the advice of legal authority in the matter, which is of the opinion that in the event of the Government being successful in its appeal, sales tax on job printing done in the interval will be collectable.

The standard organization agreement between the U. T. A. and the Toronto Typothetae expired on July 31 and practically all of the members of the local body are remaining in the organization. The new plan provides for a perpetual organization with a six months resignation notice clause. The budget has been passed for the year by the special committee and the proportion of dues has been reduced from 2 2-5 per cent to a straight 2 per cent of the annual mechanical payroll. Up to the present over eighty per cent of the membership of the Toronto Typothetae have signed on under the new agreement.

Kenneth G. Toy, Western Ontario salesman for the Provincial Paper Mills, Limited, Toronto, is spending his vacation at the Wa Wa Inn on Georgian Bay.

George Allen, of the Buntin Reid Company, Limited, Toronto, has gone on a business trip to Winnipeg.

A letter received in Toronto from I. H. Weldon, President of the Provincial Paper Mills, Limited, states that he has arrived in England and is enjoying the sights of the Old Land.

Fred W. Snyder, of the Warren Manufacturing Company, New York, manufacturers of high grade manillas, jutes etc., was a business visitor in Toronto last week.

Gerard Falkenburg, salesman for Price Brothers, Limited, Quebec, called on the Toronto paper trade last week.

Paper Sales, Limited, 13 King Street west, Toronto, are sending out some very attractive direct mail advertising in the shape of a neat folder describing the virtues of Riegel's Special Tympan for which the Toronto firm are exclusive agents for Canada. Enclosed in the folder is a sample of the tympan with the invitation to the prospective customer to test as to its uniformity, strength and folding qualities. The sample itself has been folded with and against the grain which is a pretty good test, while it also stands up well when tried out for strength and endurance. It is made by the Warren Manufacturing Company with mills at Riegelsville and Milford, New Jersey.

Word from C. E. French, who for several years was with the Howard Smith Paper Company's Toronto forces, states that he is now in Cuba and is on his way to South America, Mr. French is a special commissioner from the Howard Smith Company which has entered on the policy of developing a paper export market in various parts of the world.

George Davidson, manager of the Toronto office of the Howard Smith Paper Company, is spending his vacation at his summer home near Montreal.

Howard Whittemore, of Parsons & Whittemore, export paper agents, New York, was a business visitor in Toronto last week.

Mr. Hawker, of M. V. Dawson, Limited, Montreal, called on the Allan Paper Co., Limited, Simcoe Street, Toronto, last week.

The employing printers of Hamilton, Ont., held an enjoyable picnic at Bronte Beach on August 2nd when a large party of printers and their friends spent an enjoyable day with sports and an ald fashioned outing on the shore of Lake Ontario. The affair was in charge of a committee composed of George W. Wills, chairman, R. M. Moore, G. Richmond, Charles Gardner, and W. T. Turner.

Pirie Wyatt & Co., Limited, London, Eng., have advised the Canadian paper trade that they have changed their name to "St. Cuthbert's Paper Works, Ltd."

Otto Thorning, editor of the Cochrane Northland Post, was a caller at the office of H. B. Donovan of the Canada Paper Company, Toronto, last week.

The Copp Clark Co., Limited, picnic at, Victoria Park, Niagara Falls, Ont. on July 19 attracted several hundred of the employees, executives and friends, the party leaving Toronto in the morning and spending the entire day at the Falls. There was an elaborate program of athletic events for which attractive prizes were hung up and the whole affair was capably and efficiently managed by the various committees, the chairman of which was G. Dudley Thomas and the secretary T. A. Clough. A feature of preliminary arrangements was an extremely attractive program which will be treasured as a souvenir, illustrating in advance many of the incidents which are invariably the accompaniment of any well conducted outing.

Hon. Howard Ferguson, the new Premier of Ontario, made the announcement last week in Toronto that until his administration completes a general survey of Provincial timber resources, further timber sales in Ontario will be few and far between. He stated that the general survey —which is now complete as regards the Mississauga and some of the larger reserves—would have to be brought more clearly up-to-date before further distribution of timber resources could be countenanced. Only where the needs of a company were very apparent, he said, would the Government, for the present, at least, release any timber tracts. As regards the white pine blight, which at one time threatened to wipe out the Province's white pine resources, the Premier said that his information was that the disease had been arrested in its course across the timber country.

New Patent Regulations

Of considerable interest to pulp and paper machinery men are the new regulations of the Federal Patent Department which comes into effect on August 31, and which are more liberal in the consideration extended to inventors. The most important departures from the old legislation are extension of the time limit set for the manufacture of the patented device; provision for one partner in an invention to secure a patent upon it under certain conditions; making registration of patent attorneys obligatory and reducing the amount of fees and the danger of permitting the patent to lapse through failure to pay a second fee instalment. Some of the amendments are of a technical nature, but several are of wide interest because of the effect they will have upon the prospects of Canadian inventors seeking to reap benefit from their ingenuity and labors. The amendment making it necessary for all patent attorneys practising in Canada to register gives the Federal Department disciplinary powers over men in the profession who treat their clients unfairly or are guilty of other forms of unethical conduct.

May Change the Sales Tax

Officials of the department of customs and inland revenue at Ottawa, it is learned, are just now preparing regulations under which the amended sales tax will be administered, and in which the newsprint industry is interested. The amended act provides a flat rate of six per cent and provides for certain exemptions largely upon food stuffs and necessities of life. It does not come into effect until January 1, next year, and in the meantime the old act is in operation. Under the new act the Governor-in-Council has no power beyond the making of further exemptions from the incidence of the tax. This power he does possess. And in view of the strenuous protests against the manner in which the flat rate will militate against certain industries, and add to the cost of certain commodities, particularly newsprint, it is regarded as quite possible that when the tax goes into force next year some important changes will be made.

Bondholders of the Kaministiquia Pulp and Paper Company, now in liquidation, are being advised that a final distribution of assets equivalent to 9.15 per cent. of the face value of the bonds is being arranged, which added to the distribution of 20 per cent already made will make a total of 29.15 per cent. returned. The statement of receipts and disbursements shows a balance of $45,750 for the final distribution.

LINCOLN MILLS DELIGHTFUL PICNIC

On Monday, July 30th., the employees of the Lincoln Mills, Limited, held their annual picnic at Grimsby Beach. There were over five hundred people present, and although the weather was rather threatening in the morning, it cleared up before noon and the programme of sports was commenced.

The events were both numerous and varied. The most interesting of these however was the inter-mill girls softball game. As is quite often the case, the "dope" was upset and the Lincoln Mill won from the Lybster by a score of 16 to 5. This game was enjoyed by everyone, with the probable exception of Mr. Winlow the umpire, who was kept quite busy dodging the bat. It is reported that he squared himself with the losers by sending each a box of chocolates.

In men's softball the Lybster Mill succeeded in defeating both the Lincoln and Sulphite Mills.

A number of the Officials of the Company attended the picnic and took a keen interest in the events. The enthusiasm displayed by everyone present showed clearly that the picnic was a success and that it should be continued as an annual outing for the employees.

An iceberg in the pulpit cannot kindle a fire in the pews.

UNITED STATES NOTES

The Robert Gair Company, manufacturers of paper board and paperboard products, report for the first six months of 1923 net profits of $1,200,000 before depreciation. Depreciation charges amounted to $284,355, leaving a balance of $874,746 for bond interest and other deductions.

Many of the paper mill workers in Holyoke, Mass, who are idle because of the strike of stationery firemen and the enforced shutdown of the mills, have made efforts to obtain work elsewhere in the belief that, owing to the firm demand of the mill owners, the shutdown is likely to be prolonged. The firemen seek an increase from 73 cents to 80 cents an hour.

Bids for the sale of waste paper accumulated in a year at the Brooklyn Navy Yard, New York, were opened last week at the Navy Yard Supply Department, but the names of the bidders and the amounts were not given out. It was said that about 200,000 pounds of waste paper is gathered at the yard in the course of a year. The successful bidder will begin making collections at the yard after January 1.

The development of a process for the production of a binder board of good quality, using wood pulp derived from hard wood, is one of the latest by products of the Ford Motor Company, according to an announcement made last week. The process pulp, it is claimed, has been successfully produced following experiments which have been in progress for months at the River Rouge plant near Detroit. The product is described as being .075 to .30 of an inch thick. The company plans to extend the operation of the "soda process" by which this product was made so that the pulp thus obtained may be transformed into paper. It expects to effect a large economy in lumber conservation by utilizing all scrap pieces of its body building plant at River Rouge. Scrap lumber is thrown into a machine in which it is chipped and then is carried by suction pipes to a digester. About nine tons of chips are placed in the digester at a time, of which 75 per cent are composed of maple, the remainder being of oak ash and other hard woods. To the chips is added a caustic solution of sufficient strength to reduce the chips to a fibre under seven hours of cooking at 110 pounds steam pressure. Then the fibre is pumped into washing machines. It emerges ready for paper manufacture.

In a case of striking bag makers in Long Island City, Justice Russell Benedict of the New York State Supreme Court, has granted a temporary injunction restraining the union from intimidating employees who have replaced them. "It might be a good thing," said Justice Benedict, "if both parties in all industrial controversies should be compelled by law to arbitrate their difference instead of resorting to strikes and lockouts. But such is not the law at the present time, and to make the refusal to arbitrate on the part of the employer the basis of a refusal by the court of equity to restrain unlawful acts on the part of the strikers would amount to giving the latter a license for any kind of violence."

A new paper-barrel machine is claimed to offer great possibilities in the production of containers. Though made of paper, its product is light, strong and durable, and can be made rapidly in a great variety of shapes. The machine consists essentially of a cylinder in two parts, which can be separated to produce barrels of different shapes and the two halves are rotated together on a horizontal axis. Tough chip board paper from a roll, passing through tension rollers and an adhesive coating device, is wound tightly on the cylinder in a pre-determined number of layers. The depth of the barrel is adjusted by the separation of the cylinder halves. When the required thickness has been laid on, a slitting wheel divides the paper into two equal portions, which are drawn apart, and the middle receives an additional winding to form the bilge. It is stated that the usual form can be produced at the rate of a barrel a minute. Silicate of soda, which sets so quickly that the barrels are ready for immediate use, is the usual adhesive. For liquids a special neutral coating is applied inside to prevent corrosion. Wooden heads are commonly provided.

A report from the United States consular agent in Peru relative to Peruvian imports of paper and paper products from the United States show that in April the total of such imports was topped by the total coming from Germany whose shipments were far ahead of those coming from all other countries during the month. In March the imports from the United States had exceeded those of other countries. The April figures indicate that out of a total importation of 2,970 cases, 2,043 cases originated in Germany. Statistics for the first four months of 1923 show paper imports distributed as follows: Germany 4,561 cases; United States 1,463 cases; Belgium, 516 cases, and Great Britain, 296 cases.

MR G. L. MATTICE

Announcement is made that Mr. G. L. Mattice, whose photograph we reproduce herewith has been appointed manager of the Montreal Office of Lockwood, Greene and Co. of Canada Ltd., following the resignation of Mr. Ewart G. Horne.

The Markets

CANADIAN TRADE CONDITIONS

Montreal, August 7.—The past week has witnessed a slight revival in the local paper trade. While business is undoubtedly of a spotty character, as a whole it is fairly satisfactory. It is governed by many factors outside the control of either manufacturers or jobbers; some of the latter are of the opinion that we have not yet reached the stage where no new sources of consumption can be found, if salesmen are intelligent enough to dig up these prospects.

Although some American mills expect that the demand for newsprint will soon fall off, this is not the view held here. The indications are, in fact, that the call will be maintained through the year. All the mills are busy, and as we have pointed out, individual companies are making records as to production.

Figures compiled by the "Official Labor Gazette" for July show increased activity in the pulp and paper industry, while the statistics relating to the manufacture of paper products and the printing and publishing sections were somewhat less encouraging. The returns compiled from 448 firms whose staffs aggregated 53,513 persons, were larger by 1,776 workers or 3.4 per cent better than shown in the previous report. About 70 per cent of the expansion occurred in the Province of Quebec, while an improvement was also recorded in Ontario and British Columbia. The tendency in other Provinces was downwards. Employment during the month under review was better than in any period since 1920.

The imports of paper into Canada during June showed an increase over those during the same month last year, the figures being $813,058 and $640,592 respectively. Book and writing papers came in much smaller volume, although the value was higher. In June last we imported 486,468 pounds valued at $42,616 compared with 638,837 pounds and $41,607 in June, 1922. In writing paper the imports were considerably higher, the figures being 950,770 pounds and $63-551 in June last and 421,464 pounds and $22,760 in 1922. Roofing and building papers went up from $30,751 in 1922 to $41,279 in 1923. The buying of bonds and ledgers, writing and envelope papers (uncut) was nearly all from American mills. The imports of book and printing papers, not coated, from the United Kingdom decreased from $13,985 in June of last year to $10,891 in June 1923, whilst those from the United States rose from $27,622 to $29,218. Envelopes from the U. K. increased from 1,061 to $1,947, and those from the U. S. increased from $10,864 to $17,005.

There is no change of importance in the pulp department. Groundwood continues to be in good demand, with comparatively little offering; while bleached sulphite remains on a stable basis at old prices.

The representative of a Montreal firm of pulpwood dealers has just returned from a visit to the paper mills in New England. He states that he found general scepticism as to whether the Canadian Government meant business with regard to a pulpwood embargo; the announcements made at Ottawa were, he said, looked upon as a notice that Canada had an effective weapon when it came to further tariff bargaining. The mills did not appear to be in any hurry to buy further extensive supplies of pulpwood—they had no fear that an embargo would come into effect for a long time — if ever — and the speech of Mr. King at opening of the Imperial Forestry Conference appears to confirm the sceptical views of the mill men in those States.

Ontario Market News

The general mid-summer lull in business is reflected in the pulp and paper trade in Ontario with the wholesalers and consuming public showing a hesitancy in buying in other than rather meagre quantities. Notwithstanding this condition, however, there is no disposition to take a gloomy view of the situation. In fact the trade as a whole is optimistic and while trade in some pulp and paper lines is unusually light in Ontario just now, it is the general belief that the closing of the holiday season will see things back to normal with the companies doing better business than ever. There are already signs that improved conditions are on the way. Book paper mills report an excellent demand for their product and are running full, as are also the coated paper mills. Newsprint mills continue very active, while on the other hand there is a comparatively light demand for bonds, ledgers and writings Wrapping paper and paper bag manufacturers and the makers of toilets and tissues reports demand for their products as generally improving. The converting trade is none too brisk just now according to the testimony of manufacturing stationers, although the envelope end of the trade is keeping up fairly well. There is only a fair demand for waxed paper products and glassing and the same may be said, from a jobbers standpoint, of blanks, blotting paper and kindred lines. There has been some improvement in the paper box manufacturing line and in this connection the views of S. J. Frame, Secretary of the Canadian Paper Box Manufacturers' Association, Toronto, in a circular just issued to the trade, are of interest. He says: "As is well known, the United States during the last twelve months, characteristically going to extremes upwards or downwards, somewhat abused the improved conditions, such abuse resulting in a minor inflation causing a slowing up in buying. Canada, with a much smaller population, is always influenced by the United States market, but inasmuch as we in Canada have come along steadily during the past twelve months, maintaining stability without going to extremes, in my humble opinion the quietness in Canadian trade to a great extent arises from the sentimental influence of the United States situation. Apart from the prices on farm commodities being out of alignment with other goods, a condition which is world-wide, the conditions in Canada generally speaking being sound, with good crops in sight, it would appear that, while trade will probably remain quiet during the summer months, Canada will not for any great length of time be seriously disturbed by any setback in the United States, and the commencement of the fall season will see a considerable revival in the demand in this country. Whether or not this diagnosis is correct, there is no doubt, taking into consideration that this is usually a quiet season of the year and that any tendency toward ragged nerves arising from such quietness is liable to be aggravated by the hot weather, the cultivation of patience, calmness and restraint is necessary. Such qualities are called for at all times but perhaps in a greater degree during the quiet hot months than in the other parts of the year. It is but a truism to say that parallel with the exercise of patience, calmness and restraint is the maintenance of equilibrium and a broad perspective, and with such a condition among the members of the various associations, they will travel steadily and safely along as they have done during the past two or three years when conditions were much more uncertain than they are today."

RISE IN COATED BOOK. —New prices issued by the trade in Toronto show an increase in the price of coated book created by a slight re-adjustment of terms. The increase is about one cent a pound. No. 1 coated book is now quoted at 24½c: No. 2, 23c: No. 3, 22c long price list, these prices being subject to discount from long list as well as for quantity shipments. Both manufacturers and jobbers report a fair demand for this line of paper.

PULP. —There is no material change in the general pulp situation. The pulp market in the United States is more or less in an unsettled condition and this is having its effect on the Ontario market in the way of lessened demand and keeping the price quotations down. All of the newsprint mills, however, are active, which is responsible for a rather firm tone to groundwood pulp which is still quoted at from $38.00 to $40.00 per ton at the mill. Bleached sulphite is selling at from $80.00 to $95.00: unbleached at from $60.00 to $70.00 and news grade at from $60.00 to $65.00.

RAG AND PAPER STOCKS. —In both the rag and paper stock markets unsettled conditions prevail although a slightly firm tone is noticed in the waste paper department. Due to low prices dealers report collections light and the dealers are not quoting for either rag or paper stock except from day to day.

NEW YORK MARKETS

New York, August 4 — (Special Correspondence)— Prevailing activity in the paper industry is chiefly of seasonal character. Consumers are placing orders principally for supplies directly required and most transactions therefore involve rather small amounts of paper, yet in the aggregate the movement into consuming channels is of larger volume than is ordinarily noted at this time of the year, while the general condition of the industry is fully as healthy as has ever been the case.

There is no question but that a majority of paper manufacturers could readily accommodate more business. This seems proved by the reports of jobbers, who state that in frequent cases mills frankly admit that they are seeking orders and that, to meet competition, they are now and then granting price concessions to land the business. There is no such thing as any concerted downward movement of prices. Market levels are such as to induce buying, if anything, since paper prices, in comparison with those of any other manufactured product, are probably more reasonable, and yet there are of course always some buyers who

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look for supplies at cheaper rates, and it is these customers who are occasionally persuading manufacturers to recede from their quoted prices slightly.

The strike of firemen in the fine paper mills in Holyoke and surrounding mill centres continues. Mill owners are apparently determined not to give in to the strikers. There is only a matter of something like 70 odd firemen who have gone on strike and who are holding up operations in the writing paper plants, but the mill proprietors realize that if they grant the wage increase asked they will be sooner or later obliged to give the same increase to the other three thousand workers in their factories. Therefore, the mill owners are holding to their guns, and it is reported that the labor element is beginning to become restless in its idleness, and authoritatives advices reaching New York are to the effect that the difficulty will be smoothed over in the next few days.

Thus far the shutdown of fine paper mills in New England has had no perceptible influence on the writing paper market. Manufacturers are filling orders from stock and appear to have sufficient paper on hand to cary them along for a while yet. Prices are naturally firm, and any change that might take place as a result of the curtailed production would be upward, so that jobbers or anyone having bonds and ledgers in stock are not pressing buyers to place orders.

The newsprint situation continues exceedingly firm. Consumption at the moment is lighter than it was a few weeks ago, but this is a seasonal development which will hardly keep up and which is causing no concern to manufacturers. It is the midsummer lull when advertising of the display character drops off somewhat, and publishers consequently cut down the number of pages in their issues. Newsprint mills have nothing to worry about because first the decreased use of print paper will not likely continue, and second they have practically their entire production for some months ahead sold on contract and publishers are taking paper as rapidly as it is shipped.

Book paper mills are fairly busy. The probabilities are they are enjoying a livelier market for their product than usually at this period of the year, and inquiry for large tonnage is constantly increasing. Prices are somewhat irregular, this being due to the action of some mills in shading prices to secure certain orders. Machine finished book is quoted at an average of 6.50 cents a pound f.o.b. New York, although some grades are reported available down to 6 cents, whereas extra qualities are held at 6.75 cents.

An uptrend in prices seems to be making for greater activity in boards. Waste paper is jumping in cost at a rapid rate, and board manufacturers have been obliged to boost quotations on their product, with the result a good many consumers have come into the market to cover requirements. Boards are strengthening every day, and it begins to look as if they will sell at stiff prices during the customary period of brisk business in board along about September. Present prices range from $60 upwards per ton f.o.b. New York for plain chip, and around $65 for news board. These figures represent only a slight advance from recent bottom market levels but there is a strong tendency, and if raw material keeps on prevailing levels there seems little doubt that board values will rise further.

GROUND WOOD — Reports generally tell of ground wood firming in price and of the market gradually assuming a stronger position. This is the season when grinders are hampered in their operations by low water and, having less than usual stocks of pulp on hand and being well supplied with orders, they are hesitant about disposing of unsold pulp in the fear that they may have trouble covering their commitments later in the summer. Prices asked therefore are firm, and on the rise. Domestic grinders are reported quoting around $37 and $38 a ton f.o.b. pulp mills for spruce ground wood for prompt shipment, and in cases where consumers are situated near to producing centres up to $40 is quoted. Moreover, there is no large tonnage of pulp offered at these prices. Newsprint mills are using ground wood at a steady pace, and other consumers are buying in fairly large volume, with the probabilities in favor of a heavier demand from board manufacturers because of the sharp increase in waste paper costs.

CHEMICAL PULP — With the possible exception of bleached sulphite and soda pulp, all grades of chemical wood pulp are holding firm in price under a comparatively good demand. Papermakers are unquestionably buying in a cautious manner; there is no disposition shown to absorb other than supplies actually and directly needed, and yet the movement of pulp is aggregately far from light; in fact, it is probably better than an average for this time of the year.

Due to a lack of business, producers of bleached sulphite are said to be granting price concessions. The largest manufacturers in this country and in Canada are reported quoting 5 cents a pound at pulp mills for bleached sulphite of bond paper quality and 4.50 cents for book grade, yet it is stated on high authority that some orders are being accepted at slight reductions. Foreign bleached sulphite is quoted at an average of 4.50 cents per pound on the dock at New York for No. 1 pulp, though some supply is available at 4.25 cents and extra strong pulp is held at 4.75 cents. Unbleached sulphite is firm at around 3.50 cents a pound ex dock for prime foreign sulphite of strong quality, with sales at this price basis made and with importers reporting sales in exceptional cases at 3.55 cents. Soda pulp has eased off a trifle. Two of the principal producers on this Continent are reported quoting 4 cents a pound at pulp mills but others are booking orders at 3.75 cents f.o.b. shipping points.

The feeling persists among sellers of pulp in New York, and importers in particular, that higher prices will be seen this fall. If consumption approximates normal during the last few months of the year, it is believed paper manufacturers will be actively in the market as buyers, and, not having usual supplies in Scandinavia to draw on, market levels will rise. It is declared that offerings by Swedish manufacturers are of small volume, as a rule, and that it is pretty well assured mills in Scandinavia are well sold up for the rest of the year.

PAPER STOCK. — Prices of old paper continue to advance and the market is very nearly in a booming condition. It is stated on good authority that consuming mills are not buying in any unusual volume for this period of the year; that they are purposely confining orders to supplies directly required, and yet the movement of prices is sharply upward. This would seem based more on circumstances at the supply end rather than at the consuming end, since packers claim to be getting only a small percentage of their normal amounts of old paper because of high labor costs and the resultant desertion of many paper stock collectors for other employment.

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OF CANADA

A Weekly Magazine Devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades

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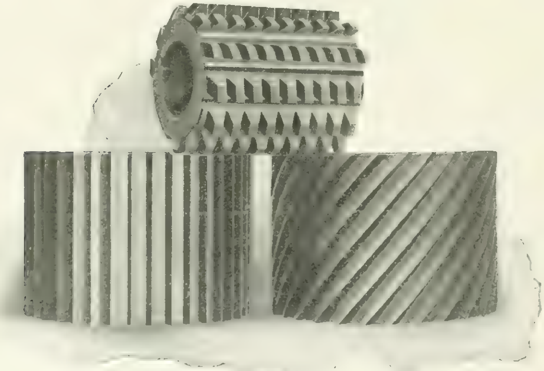

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:-: EDITORIAL :-:

THE FORESTRY CONFERENCE

We had the privilege of attending some of the sessions of the Imperial Forestry Conference which held business meetings at Ottawa last week. The discussions were most earnest, and excellent papers and reports were presented by the delegates from the different parts of the Empire. One could not listen to these statements without feeling the largeness of the Empire and at the same time, the interdependence of the different parts. One of the connecting links running through the whole structure seemed, without question, to be the supply of timber for various purposes, and one of the satisfactory conclusions to be drawn from discussions and remarks was that the Empire contained all kinds of timber. These kinds are so varied in the different parts of this commonwealth of nations that timber can and should form a basis for very considerable volume of trade among the Dominions and with the home country.

The Conference has, no doubt, brought home to many of the wood users of Canada, a distinctly new conception of what the other parts of the Empire have to offer to wood using industries. Just one instance of this is the green heart tree which grows in British Guiana, and which has the peculiar and valuable property of resisting attacks of marine borers. This is of peculiar interest to concerns in British Columbia, especially to paper mills which in some instances are actually built on piles. A representative from British Guiana had twenty or more samples of different kinds of wood suitable for various purposes, and representatives from other parts of the Empire made reference to products of the forests of their countries which could be sent to Canada in exchange for our softwood. One interesting example of the value of these Empire conferences was the remark made by Sir James Calder that he had seen burned up in destructors in New Brunswick, slabs which could have been sawed into thin lumber used for making banana boxes or crates, such as are now supplied to the value of many thousands of dollars by Scandinavian countries to the West Indies.

Canada should get two great lessons from this conference, first, to trade as far as possible with other Dominions and the home country, and second, to preserve our almost priceless softwood for the Empire's requirements.

STRAW PULP

Our London letter this week makes reference to the visit of Sir Frederick Becker of Canada this summer in connection with a broad plan of this great forward looking exponent of pulp and paper manufacture. It is very interesting and hopeful that Sir Frederick is taking a deep interest in the subject of pulp from straw. Canada can well welcome him and give him every assistance in carrying out experiments and investigations in connection with this material.

Some time ago, in an article which was published in the Pulp and Paper Magazine, Mr. Martin L. Griffin, who has had a long and wide experience in manufacturing paper of various grades, made a strong plea for the utilization of straw for the manufacture of high grade papers, and predicted that before long it would become not only economically necessary, but financially desirable, to begin on this continent measures for the production of high grade straw pulp. It is recognized that the straw fiber is not the equivalent of wood fiber in all respects, but it has been shown that the straw fiber is to be looked upon as a satisfactory supplementary material for paper making. In some products, of course, such as binders board and corrugated board, the straw is used without chemical treatment other than that required for softening it. For other products, such as light weight printing papers, where straw properly prepared is practically a substitute for esparto, it is necessary to cook more carefully and to bleach the pulp to a good white color. This has been done elsewhere, and there is no reason why it cannot be done in Canada.

The Dominion certainly has plenty of raw material for the manufacture of straw pulp. A conservative estimate of the yield of wheat alone in Canada this year places the output at approximately 300,000,000 bushels, and some have given even a higher figure. There are other grains which are also raised in large quantities. In figuring conservatively at a ton of straw per ton of grain, we should have a minimum of 9,000,000 tons of wheat straw, besides a considerable amount of other straws. The great centre of the wheat crop is in Saskatchewan, and in this province, we also find natural deposits of sodium sulphate, as well as a large amount of lignite for fuel, and it is but a short haul from the great coal fields of Alberta. The conversion of this enormous amount of material now results in the formation of much smoke and a little ashes. If but one percent of the total were converted into paper pulp, we should have on the air dry basis, approximately 40,000 tons a year. This would be a big factor in the pulp market, but if ten percent were converted into paper pulp, we should have about the equivalent of the amount of chemical pulp which Canada now exports. Straw pulp would of course, not be an exact equivalent of sulphite pulp for paper making, as the two have distinctly different qualities, but it would doubtless be possible to make some changes in the production of paper so as to utilize pulp from straw to a considerable extent and in consequence relieve largely the demand on the forests. This would be doubly a conservation measure by saving that much utilization of wood so as to permit new growth to mature, and at the same time, it would be converting what is now lamentably a waste product into something of commercial value.

We trust that Sir Frederick will establish a plant in Canada that will demonstrate the economy of the proposition. Personally, we feel that there is every chance for success. We are quite astonished at the suggestion, however, that there are enormous areas in Australia which might be used for raising straw. It seems ridiculous to consider planting additional areas to grain, when, at the present time, there is such an enormous amount of straw being wasted in Canada, and probably similar or proportional amounts in other grain growing countries, and at the same time there is hardly sufficient market for the grain that is now being grown to maintain prices at a level which will give the farmer a day's wages for a day's work, or even a boy's wages for a man's work.

THE BRITISH EMPIRE EXHIBITION

The British Empire Exhibition, which will be held in Wembley Park, London, England, from April to October inclusive, 1924, will provide the greatest opportunity in history for the display of Canadian products, particularly manufactured goods.

The British Empire occupies one-quarter of the earth's surface and includes portions of every continent. The countries of the British Empire contain one-quarter of the entire population of the world. A great part of the world's shipping and foreign trade is under British control.

London is still the financial and commercial centre of the world. All roads by land and sea lead to London.

Practically every country of the British Empire will display its products at this Exhibition. Millions of people from the British Isles, from other countries and from Europe will attend it.

The Canadian Government has voted one million dollars to help finance Canada's section of the Exhibition. Space, made available for manufacturers at merely nominal cost, is necessarily limited and applications will be accepted in the order in which they are received.

The Editor has been appointed to represent the Pulp and Paper Industry in preparing an exhibit.

COBWEBS

We notice that the government of New Brunswick has decided not to proceed with the installation of a power plant and transmission line down the St. John River Valley. The reason for this is given as a lack of a definite undertaking for consumption of the amount of current necessary to make the proposition financially sound. It will be remembered that the International Paper Company had a lease of power rights at Grand Falls, and that the lease was not renewed because the Company had not proceeded with construction of a power plant at that point. The reason for the private company not going ahead was precisely and exactly the same reason which now constrains the Government to refrain from taking the same step.

There are many Canadian paper makers who will learn with deep regret of the recent death of Mr. James Nuttall, who has been for many years the head of the well known paper machine manufacturing firm of Bentley & Jackson in England. This concern has made many of the paper machines now running in Canada and was, we believe, the first concern to send a paper making machine to this country. At any rate one of the oldest machines it that which was placed in the mill at Hartville, Nova Scotia. This machine was installed in 1876. The mill containing the largest number of Bentley & Jackson machines is the Wayagamack mill at Three Rivers, Quebec, where there is a regular battery of these machines turning out high grade kraft paper.

We recently heard Principal Ritchie of the Congregational College in Montreal make a statement which is worthy of our thoughtful consideration. He said, "Life was intended to be a dignified walk with God, but we have made it a scramble for what we can get."

It is understood that a company recently organized for establishing a newsprint mill in Canada, has decided to proceed only with the erection of a groundwood mill. That seems to us, in view of the large production of newsprint soon to come on the market, as a very wise move. A number of the paper mills that have recently extended their newsprint production have, by doing so, made their own market for a considerable amount of pulp which previously had been sold to other customers; that is, to their own competitors. This previous excess of groundwood pulp has been taken off the market much more rapidly than new groundwood production has been provided for. It would seem that there would not be any difficulty in disposing of a fair amount of new groundwood production.

The Canadian Pulp and Paper Industry and Its Raw Material*

The pulp and paper industry of Canada, which rests upon the utilization of the country's pulpwood resources, ranks second in point of capital investment among the industries of the Dominion. Its capital amounts to close upon four hundred million dollars. It ranks next to agriculture and the live stock industry in its contribution to the external trade of Canada. The value of its annual exports amounts to more than one hundred millions. It comprises over 100 establishments, scattered throughout the country, principally in Quebec, Ontario and British Columbia. It gives regular employment to some 25,000 operatives, exclusive of woodsmen, who, at certain seasons, number as many more. It pays out in salaries and wages some $35,000,000 annually and produces commodities valued at over $150,000,000. Its greatest growth has taken place within a comparatively few years and has been due in part to the waning supply of pulpwood in the United States, which has made it necessary for that country to look to the Dominion for a considerable part of its requirements of pulp and paper. Water-power development has had much to do with the growth of the industry and other favorable factors have played their part. Its future, it is becoming more and more evident, rests upon the degree of scientific management which can be applied to the forests and this, in turn, depends upon the measure of support accorded by the governments responsible for the protection and conservation of the country's resources.

Since 1908, which is as far back as reliable records are available, the consumption of pulpwood in Canada has shown a remarkable increase. In 1908 the Canadian mills used 482,777 cords of wood in the manufacture of pulp and paper; in 1920, the consumption of pulpwood amounted to 2,777,422 cords, or almost six times as much. While the dollar value of the wood has not advanced at the same ratio, there has been a considerable increase as is shown by the fact that the average value per cord in 1908 was $6.07 while in 1921 it was $17.55, an increase of approximately 190 per cent.

The year 1920 witnessed the greatest consumption of pulpwood by Canadian mills, amounting, as before stated, to 2,777,422 cords. Consumption in 1921 declined somewhat, owing to the general business depression, but when the figures for 1922 become available it will be found that consumption was greater than in 1920, and will probably exceed 3,000,000. In the last fifteen years the Canadian mills have consumed approximately 25,000,000 cords of wood. The larger part of this wood was spruce, although of late years the percentage of spruce has not been so high as it was at the beginning of this period. In 1908 spruce formed 87 per cent of the total wood consumed, and balsam 12 per cent; in 1921, the last year for which figures are available, spruce accounted for 69 per cent of the total and balsam 25 per cent, hemlock ranking third with about 5 per cent.

In addition to what was consumed locally a considerable quantity of wood was exported during this period. In 1908, 895,409 cords, having an average value of $5.47 per cord, were exported; in 1922, 1,011,332 cords, with an average value of $10.24 per cord. Total exports of pulpwood during the past fifteen years amounted to 15,377,000 cords or a yearly average of 1,025,000 cords. Combining domestic consumption with exports we have a total for this period of over 40 million cords, of which our own mills have consumed 62 per cent and our exports 38 per cent.

It is of interest to note that whereas in 1908 we exported 65 per cent of our cut of pulpwood and consumed only 35 per cent, this ratio gradually changed until in 1921 we exported 33 per cent and consumed 67 per cent. Since in 1922 our exports were smaller and our production of pulp and paper greater than in 1921 the proportion consumed at home as compared with the volume exported will be found to have increased.

Since 1902 Canadian exports of pulpwood have all gone to the United States. We supply about 20 per cent of the total pulpwood used in that country. This, however, does not represent our entire contribution to their pulp and paper requirements since that country also takes about 90 per cent of our pulp and paper exports. These have also increased very considerably in recent years.

Canada's increasing consumption of pulpwood is, of course, reflected in the large increase in the manufacture of pulp and paper which has taken place in the last fifteen years. The annual report of the Forestry Branch showed 40 mills producing pulp in Canada in 1908; in 1921 the report shows 67 mills engaged in the manufacture of pulp. In the earlier year the total quantity of pulp produced was 306,738 tons valued at $2,931,653, in 1920 the total production amounted to 1,960,102 tons valued at $141,553,000. This, however, was a year of abnormal market prices and is not to be taken as a criterion.

In volume of production mechanical pulp with about 1,500,000 tons per annum leads. Production of this grade of pulp increased from 325,609 tons in 1908 to 1,090,114 tons in 1920. Of the total production in 1920, 703,000 tons were made for use in domestic mills and 304,000 tons were exported. Since 1908 Canada has exported 3,929,000 tons of mechanical pulp, of which 2,764,000 tons have gone to the United States and 935,000 tons to the United Kingdom. Of the total production of 1,090,014 tons in 1920, 558,000 tons or over one-half were produced in the Province of Quebec, and 394,000 tons in Ontario.

The total production of chemical pulp in 1909 was 120,000 tons of which 115,000 tons was sulphite pulp. In 1920, production of chemical pulp amounted to 848,528 tons, of which 654,273 tons was sulphite and the remainder sulphate, with the exception of 5,800 tons of soda pulp. Previous to 1909 no pulp was produced in British Columbia but in that year the province manufactured 644 tons, all sulphite with the exception of 44 tons of soda pulp. In 1920 British Columbia produced 108,774 tons of mechanical pulp, 92,466 tons of sulphite and 17,242 tons of sulphate; a total of 218,482 tons.

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* Paper read by Edward Beck, Secretary of the Canadian Pulp and Paper Association at the British Empire Forestry Conference, Ottawa, August 10, 1923.

The total production of chemical pulp in 1920 was 848.528 tons, of which Quebec produced 400.355 tons; Ontario 256.317 tons and British Columbia 109.708 tons.

It might be well to point out in passing that while the groundwood tonnage is considerably higher than chemical pulp tonnage it is estimated that at least 50 per cent of the wood used was consumed in the chemical pulp mills.

Canadian exports of chemical pulp have risen from 40,687 tons in 1908 to 507,827 tons in 1922. Of the total production we export about 60 per cent, most of which goes to the United States with smaller quantities to England, France and Japan. During 1922 Canadian exports of chemical pulp amounted to 507,827 tons valued at $31,567,044 divided as follows: bleached sulphite, 151,048 tons, valued at $12,112,480; unbleached sulphite 208,445 tons, valued at $10,377,746, and sulphate, 148,335 tons, valued at $9,166,818.

According to the latest census report the Canadian mills in 1921 had an annual capacity of 1,320,344 tons, dry weight, mechanical pulp and of 1,039,866 tons of chemical pulp.

While the figures given above indicate that the largest cut of pulpwood in any one year has not greatly exceeded four million cords, the probabilities are that the current year will witness a cut somewhat in excess of five millions. New mills which have come into operation or are in process of building will materially increase the domestic demand. Exports are also increasing. From January to June inclusive, this year, Canada exported 731,162 cords of pulpwood as compared with 462,196 cords during the corresponding period last year, an increase of 58 per cent over 1922. The indications point to a still greater rate of increase during the remainder of the year. It is safe to assume that the annual drain upon Canada's pulpwood resources from now on will amount to not less than 5,000,000 cords a year as long as that amount of wood is available. This, of course, takes no account of the enormous amount of timber cut for other purposes.

The question which arises as to how much farther Canada can go in the development of the pulp and paper industry with reasonable assurance of being able to find the required raw material for its maintenance and without jeopardizing the enormous amount of capital already invested. This brings up the subject of Canada's pulpwood supply, concerning which there are as many and as varied opinions as there are authorities. Some official statistics have already been placed before the Conference. Unofficial estimates vary. Some of them say there is enough pulpwood in Canada to last all reasonable requirements for centuries; others that, even should there be no increase in the present rate of consumption, there is not enough maturing pulpwood to serve the existing industries for more than a comparatively short period and that if fire and insects are allowed to continue their destructive work the life of the existing supply will be shortened still further.

It is unfortunate that no authentic inventory of Canada's pulpwood supply is available and that most of the estimates cannot be accepted as being reliable or up-to-date. One of Canada's first necessities in dealing with the pulpwood problem would seem to be that of securing trustworthy data as to the supply of standing timber.

In 1919, Mr. F. J. Campbell, then president of the Canadian Pulp & Paper Association, in an address before the Canadian Forestry Association, made some interesting deductions from an official estimate made in 1904 of the then available pulpwood resources of the Province of Quebec, the amount being given as 176,783,966 cords. Consumption in 1904 amounted to but 526,865 cords and it was calculated that the province had sufficient pulpwood at the then rate of cutting to last for 334 years. But, as Mr. Campbell showed, consumption by 1916 had increased to 1,711,151 cords, or 325% of that of 1904, which, taking into account the volume consumed in the intervening 12 years, brought down the expectancy as it should have been from 322 to 95 years. By continuing the calculation and using the same rate of consumption as prevailed in 1916, Mr. Campbell showed that by 1928, or after a lapse of 24 years from the time the original estimate was made, the expectancy of supply would be still further reduced to 45 years. He carries his calculation still further, by saying:

"In the year 1890, the value of the output of the pulp and paper industry in Canada was $3,633,257, in the year 1915, this output had grown to $40,348,021; in 25 years, it has become eleven times greater than it was. The figures I have mentioned regarding our wood supply allow for an increased consumption that in 24 years or in the year 1928, only nine years ahead, will be 5 1-2 times greater than in 1904, but it is evident that at the prevailing rate of development, the consumption will be at least ten times greater than in 1904, or 5 1-2 million cords per annum. At that rate, the remaining supply would be about 121 million cords or, without allowing for further increase, sufficient for only 22 years more."

He added

"We cannot get away from the constantly accelerating rate of consumption and as our supply, whatever it may be, is not at present increasing, the need of conservation and reforestation is daily becoming more urgent."

Mr. George Chahoon, Jr., another former president, in a bulletin issued by the Association in 1920, emphasized the rapidly dwindling supply of pulpwood, its rising cost and the vital necessity of taking adequate steps for its replenishment.

"The pulp and paper companies have foreseen the difficulty which confronts them in the waning supply and the increased cost of logging and transportation, and have given much study to its solution," he said. "This great industry has organized and perfected a system of fire protection and has obtained from the Government the enactment of better laws for the protection of the forests. It has proposed legislation for reforestation and is urging the Government to pass it. It has spent money for experimental work, so that there would be a sound basis of facts on which to lay down rules for forest management and on which to base a wise forest policy. Experimental plantations have been made to determine the best species to plant and the proper soils on which to plant them.

"This whole question of managing the forests for a sustained yield and for the good of the country at large cannot however, be left to private or corporation effort. Since the forests actually belong to the Dominion and Provincial Governments, it is their plain duty to manage them properly. Then, too, the long term investment required, the length of time necessary to raise a crop of trees, the low rate of interest which must be charged against the principal invested, require that such work and management must be undertaken by the only certain long-lived agency capable of such work—the Government. In all the provinces a large part of the general expenses of government are taken out of revenues, and in instance is a reasonable or properly adequate sum being used in the upkeep and perpetuation of the property. Our legislators and administrators are beginning to realize the situation, and much progress has been made in the past five years. There is much need of further progress and in this work both the governments and the public can be assured of the broad-minded and public-spirited attitude of the pulp and paper industry and can be assured that it will co-operate in every way to develop a forest policy which will place Canada on a firm and solid basis as the greatest pulp and paper producing country in the world."

Dr. C. D. Howe, Dean of the Faculty of Forestry of the University of Toronto, who is a member of the Conference, is also on record as to the probable duration of Canada's pulpwood supply. He says:

"Estimates have been made which extend all the way from 15 to 1,000 years. About 30 years ago a prominent lumberman predicted that the timber supply of Eastern Canada would not last 25 years and we still have some timber left. Yet his prediction came true. Using the standard of his time he was right. In those days they were cutting trees two feet in diameter. It apparently did not occur to him that the use of smaller trees would become profitable. If we were today dependent upon trees two feet in diameter for our timber or pulpwood supplies we would be facing a famine. Except in protected places, softwood trees of that size are gone from the forest—and they will never return. There are very few areas of commercial timberlands in the St. Lawrence drainage basin and in the Maritime Provinces that have not been cut over at least once—most of them several times and some of them five or six times in the past 60 years, and each time smaller trees and more inferior material were taken. Rising prices of lumber made this possible. The higher the price of lumber, the closer the utilization of the forest. Trees too small to be utilized today may, and, in all probability, will be used 10 or 20 years from now. Estimates as to the continuance of the spruce pulpwood supply are usually based on trees 12 inches or more in diameter, for this is the diameter limit below which spruce trees may not be legally cut in Quebec, where the pulp and paper industry is centered. Personally, I believe that the supply of spruce trees of that class will not last very much longer at the present rate of increase in pulpwood production in Eastern Canada. In fact, the diminishing of the supply has already begun.

"Woods not now extensively used may be pressed into service, such as poplar and birch. Enormous quantities of these species as yet practically untouched are to be found in Eastern Canada. The making of pulp from poplar requires a different process from that of birch and each in turn a different process from that of spruce. So if the hardwoods were used instead of spruce, the pulp mills would have to be reorganized, new machinery installed and new processes established. This would be expensive, but it would be done if necessary—and the consumer of pulp products would pay the cost.

"The other alternative before the pulp companies when the supply of 12-inch spruce gives out, would be to move northward into the Hudson Bay region and utilize the small undersized spruce to be found in the north country where thousands of square miles are covered with spruce from 4 to 8 inches in diameter. It has attained full growth; it will never be any larger and might as well be cut. As you know, the northward migration of pulp and paper mills has already begun. I believe it will continue. I believe the next generation will see the centre of the spruce pulpwood industry on Hudson Bay waters instead of on St. Lawrence waters. The manufacturing costs will be high, the transportation charges will be heavy— and the consumer will foot the bills."

These views are typical of those in Canada best qualified to deal with the subject. They all agree in the premise that so far as Eastern Canada is concerned we are rapidly approaching the time when the industries which owe their existence to our coniferous woods will experience great difficulty in maintaining their supply of raw material. The hopeful thing about the situation is that public opinion is being surely but certainly aroused in behalf of scientific methods of dealing with the remaining forests and that the governments, both federal and provincial, are actively interesting themselves in bringing about an improved condition.

Note: Further statistics on production will be published in the next issue of the Pulp and Paper Magazine.

POWER PRICE SETTLED BY GREAT LAKES PAPER CO.

The agreement between the city of Fort William and the Great Lakes Pulp and Paper Company, represented by L. L. Alstead, of Chicago, was signed Saturday by the mayor and city clerk for Fort William, having already been signed by the company. This will end negotiations which have been going on for many years, involving the controversy over the price of power in the city of Fort William from the Nipigon development of the Hydro Electric Commission of Ontario. The company gets power at $18 per horsepower. The site selected is on the Kaministiquia river, partly in the township of Neebing and partly in the city. Plans are already drafted and work on a plant to cost about three million dollars will commence at once. The city and the township of Neebing provide a portion of the site and give some taxation concessions.

JUNE PAPER PRODUCTION IN JAPAN

The total production in the month of June of the twelve leading paper mills in Japan, members, of the Japan Paper Association, amounted to 63,229,000 lbs. Comparing with the month of May, both production and sales decreased, 1,572,000 and 9,140,000 respectively. Itemized figures follow:—

Printing paper (high grade)	8,534	8,330
Printing (low grade)	10,780	8,866
News	27,000	24,209
Torinoko	4,121	2,855
Hand made paper	1,391	1,563
Match	914	615
Colored	682	554
Chinese	659	260
Miscellaneous	5,701	5,384
Total	63,229	55,054
January—June	368,305	370,893

THE BUSINESS OF SELLING by Harold Whitehead, Head of Department of Business Methods and Sales Relations, Vocational Department, The College of Business Administration of Boston University. 247 pages. Price $1.40.

Whitehead's The Business of Selling provides an all-round course in salesmanship. It shows that success in life depends in great measure on one's ability to understand people; to get their point of view; to forecast their probable reactions to known stimuli; to understand their personal interests; to find a common ground on which to meet and consider problems of mutual concern. Through the use of this text students will realise that everyone has something to sell and consciously or unconsciously practises the art of selling.

Half the troubles of life are imaginary.

ENORMOUS PRODUCTION OF NEWSPRINT

The Canadian Pulp and Paper Association has issued the following report on the production and export of newsprint paper:

The production of newsprint in Canada during the first six months of 1923 has reached a total hitherto unapproached for any similar period. Up to the end of June, Canadian mills manufactured 619,802 tons of newsprint paper, which represents a daily average production of 3,973 tons, or about 470 tons more than the daily average throughout 1922. This tremendous increase is due largely to the addition of new machines to the productive capacity of the mills, but also reflects an increased efficiency of operation and the speeding up of existing machines.

A comparison of the production figures for the first half of this year with those for corresponding periods of previous years shows that production was 20 per cent. greater than in 1922; 66 per cent. greater than in 1920. The production figures for the years from 1920 are as follows:

First 6 months.	Tons
1923	619,802
1922	516,506
1921	373,988
1920	443,512

Other new machines are scheduled to come into operation before the end of the year, and with the recently installed machines getting into full production, it is expected that the production for the second half of this year will surpass that for the first six months by a considerable amount. On this basis, it is probable that the Canadian mills in 1923 will produce well over 1,250,000 tons of newsprint. When it is recalled that the total production in 1913 was only 350,000 tons, the magnitude of the development in this branch of industry during the past ten years will be appreciated.

The consumption of newsprint in Canada is from 120,000 to 130,000 tons annually and approximately 90 per cent. of our production is exported. Of the 619,802 tons produced in the first half of the year, 550,765 tons were exported, 536,137 tons going to the United States and the remainder chiefly to Australia, New Zealand and South Africa. Exports in the corresponding six months of 1922 and 1921 were 457,340 tons and 319,925 tons respectively, so that this year's exports show a gain of 20 per cent. over those for 1922 and of 72 per cent. over those of 1921.

The distribution of these exports is shown in the following table:

	1923. 6 mos.	1922. 6 mos.	1921. 6 mos.
U. S. A.	536,187	421,365	292,615
Australia	5,163	17,942	10,315
N. Zealand	6,095	5,615	5,276
S. America	323	2,365	7,291
S. Africa	2,427	4,123	3,241
All other	570	5,930	1,187
	550,765	457,340	319,925

While our exports to overseas countries have been considerably below the level of the past few years, there is a big increase in the shipments to the United States. Consumption in that country during the last twelve months has broken all records, amounting in 1922 to nearly 2,500,000 tons, of which 1,029,000 tons were imported, 87 per cent. of the imports coming from Canada and the remainder from European countries. This big demand from the United States market is reflected in our exports to that country, which this year have shown an increase of 27 per cent. over those foı last year and of 83 per cent. over 1921. .

TECHNICAL ASSOCIATION PAPERS, SERIES VI (1923)

The yearbook is illustrative of the broad scope of the studies carried on during the year by the Technical Association, including several important phases of waste in the industry, the wood pulp processes covering mill control and chemical research, several problems in general as well as special pulp and paper manufacturing, the physical testing of pulp and paper, plant management, industrial education and a bibliography of the year's literature on papermaking.

Among the contributors are many prominent executives and engineers of the industry although it is interesting to note the large number of Junior members whose names appear as authors.

The volume opens with the very exhaustive report of the Committee on Waste, covering three subjects: White water losses, Barking drum waste and the Losses due to broke, each of which is separately treated. The report with the discussion on it, contained in the proceedings, will be found worthy of study.

Papers on the manufacturing of pulp and paper are: "Drying and Conditioning of Coated and Other Processed Papers" and "Heat Transference in Machine Room Ventilation" both by J. O. Ross; "Steam Economy in Pulp and Paper Mills," by Edward P. Gleason; and "Anti-Friction Bearings," by George H. Spencer.

Research on chemical pulp processes is dealt with in three papers, one on the soda process and two on sulphite.

Paper drying, one of the subjects of active interest among manufacturers and engineers, is covered by a very complete report containing the results of three tests with the description of the apparatus used in making them, by S. B. Jones and W. F. Goldsmith. Appended to the report is a shortened form of the paper drying code for the use of mills not equipped to make the more detailed analysis but which covers the minimum of items that are considered necessary.

Under paper testing a number of papers deal with different instruments and their results: Mullen bursting strength tester, Elmendorf tearing tester, Schopper folder, Valley size tester, and suggested method for determining the brittleness of paper. One of the most important under this heading is "The Effect of Atmospheric Humidity in the Physical Testing of Paper," by P. L. Houston and H. S. Kirkwood. The investigation was made on 13 different grades of paper from the classes of printing, wrapping and writing papers, under eight different humidity conditions from 15 per cent up to 83 per cent relative humidity. The tests made were moisture content, weight, thickness, expansion, tensile strength, elongation, rupture, folding endurance, tearing resistance and bursting strength, the results of which are given illustrated by curves.

A complete bibliography of papermaking for 1922 by Clarence J. West and A. Papineau-Couture is included as well as a list of the subjects covered by the Committee on Bibliography in the forty contributions it has made since 1917.

The price is $3.00, on receipt of which, the Secretary; Technical Association, Pulp and Paper Industry, 18 East 41st will forward a copy of the book while the supply lasts.

STEAM ACCUMULATORS

By M. EMANAUD

(Translated from "La Technique Moderne", xv, 193-197 (April 1, 1923) and 237-241 (April 15, 1923), by A. Papineau Couture

(Continued from last issue)

Case 2. — When used as a common storage for a battery of boilers an accumulator helps to overcome the difficulties inherent to the operation of several boilers working in parallel. If the rates of combustion under the different boilers are not properly regulated the load may be very unevenly distributed; and should the pressure in one of the boilers fall considerably for some reason or other it may even happen that the other boilers distill into it if the steam connections are not properly made to prevent such an occurrence.

The central steam accumulator, with its relatively constant pressure which is lower (usually but slightly) than that of the boilers, makes them independent of one another and makes the control of the production of the individual boilers much easier.

However, there is no advantage to be gained from an accumulator when the boilers furnish directly superheated steam; but in such a case a common dry steam receiver may be worth considering if the piping is not sufficiently large to take its place.

Cases 3, 4 and 5. — The use of an accumulator for exhaust steam must be along the lines of the installations at the Bruay mines such as we described above. It allows of making the most of the high efficiency of low pressure turbines for using the exhaust of machines which run intermittently (extracting machines, pile drivers, etc.) for which it is not possible to install a central condensing plant. And further, it may often be worth while increasing the back pressure of the exhaust of these machines and to correspondingly increase the pressure of the live steam, which gives additional power which can be used very efficiently.

The use of an accumulator for this purpose leads to the utilization of steam in stages, as recommended by Kammerer in the Fifth Report of the (French) Committee on the Utilization of Fuel ("Journal Officiel," Dec. 21, 1921). This method consists in using the steam successively for different purposes as it loses its "quality" (pressure or temperature); and it is especially advantageous in "all industries in which the requirements of steam for heat and processes is from one to four times the amount which would be required to furnish the necessary mechanical power by means of a condensing engine." (Examples, breweries, sugar refineries, paper mills, etc.)

But in most cases these requirements do not all occur simultaneously; and the use of an accumulator then greatly facilitates the practical realization of such a conception. Such factors as the location of the accumulators, their working pressure, the method of connecting the various pieces of apparatus and of controlling them, either by hand or automatically, and so on, constitute a problem which in certain cases may be very complex, but which, owing to its very complexity and the large number of variables involved, is often given a very happy solution.

Moreover, there may be diversity, not only in the apparatus and machinery using the steam, but also in the original steam generators. Such is the case, for instance, in steel plants when there may be several boiler rooms, some burning coal and working under approximately constant conditions, the remainder using blast furnace gases and working in a much less regular manner owing to variations in the amount of gas available. Compensation of such variations can be very greatly facilitated by the use of steam accumulators.

Very frequently, in such installations bleeder types of engines can be used as well as engines working under a high back pressure. Turbines are particularly called upon to play a prominent part owing to the possibility of drawing off the whole of the steam after some of the stages, and also owing to the great purity of the condensate which they give which is absolutely free from oil.

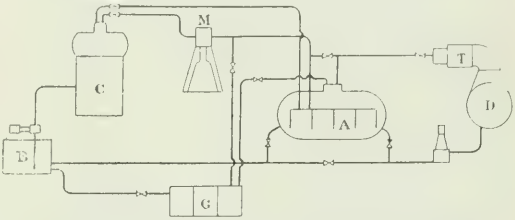

FIG. 11. — Schéma de connexions d'un accumulateur de vapeur.
Diagram of connections of a steam accumulator.

Fig. 11 shows diagrammatically how the connections can be laid out in a simple case: steam from the boiler C is furnished directly at working pressure to the engine M which can, for instance, generate the mechanical power used in the plant. This engine, which works under a back pressure, exhausts either into the accumulator A, or into the low pressure turbine T, or into apparatus G which uses steam or hot water intermittently. The turbine T exhausts into the condenser D, and the hot water from the latter is sent either to the accumulator or to the feed water tank B. Connections are also provided to send live steam directly to the accumulator, to feed the boiler with hot water from the accumulator, and to send either hot water or steam from the accumulator to the apparatus G.

In such an installation as this the accumulator renders services which could not be rendered by a boiler with a large water capacity. It not only compensates for fluctuations in the steam demand, but it also prevents any considerable falling off in the pressure which would occur if steam were furnished directly from the boiler to various apparatus working under widely different pressures. It may even be sometimes worth while installing several accumulators working at different pressures.

Case 6 — By means of the very large types, such as the Ruths accumulator, it now becomes possible to handle successfully the peak loads in electric power stations.

Various methods of handling these peaks have successively been used. Originally, when the boilers were numerous and of small unit capacity and were operated at about 100 per cent. of their rating it was necessary to start up additional boilers so that they would be under full pressure in time to take care of the peak. Later, when the technique of boilers was directed to the use of a small number of units of very large capacity, the tendency was to handle the peak load by increasing the rate of firing instead of bringing additional units into action. With modern types of boilers steam production can be progressively increased three- or fourfold. In the earlier stages of this development semitubular boilers were frequently used, but they allowed of changing the steam production more gradually. But in this case again the use of steam accumulators to supply special turbines for handling the peak load gives the combined advantages of water tube and of fire-tube boilers. The main difficulty lay in the large size required for such accumulators; but now that they are being built to contain several hundred cubic meters of water and to operate at relatively high pressure, their use becomes possible.

They will be in exceptionally favorable operating conditions, for the rate of discharge will be rapid, and the charging can be slow; and we have seen that proper charging requires a certain amount of time. On the other hand, they can be furnished with steam from intermediate stages of the turbines. They will allow of more regular operation of the boiler room, thus making for efficiency and rendering useless the very high rates of combustion which are always the least efficient.

Should the size of the accumulator required be too large, a compromise may be made: the accumulator may be used to compensate for hourly variations in the load, while daily variations, such as the evening peak load, are partly handled by increasing the rate of combustion.

At the Lauchhammer power plant, which we have already mentioned, which supplies a group of metallurgical plants, the original installation of 25,000 kilowatts was increased by addition of a 15,000 kilowatt group and of two Ruths accumulators. The installation consists of two turbo-alternators, one of 12,500 kilowatts using live steam, and the other of 2,500 kilowatts using steam from the two 350 cubic meter accumulators. The high and low pressure stages of the turbine work alternately, the exhaust from the high pressure stage being delivered to the accumulators and the low pressure stage drawing its steam from them. Before this addition twenty-four boilers containing altogether 750 cubic meters of water handled with difficulty the variations in the load, and the efficiency did not exceed 55 per cent. It has been greatly improved by the use of the accumulators, and the consumption of coal per kilowatt has been cut down by 450 grams.

Case 7 — The accumulator may be used more particularly for its thermal effect, that is, the temperature of the steam is of greater importance than its pressure, for instance when it is required for heating, or for chemical processes, or even if it need not necessarily be in the form of steam but can be used equally well as hot water (breweries).

The use of exhaust steam for heating purposes is often possible, and can be accomplished in various ways:

1) Heating by hot water circulation;

2) Heating by means of low pressure steam, the exhaust steam being sent to the heating system instead of being sent to the condenser;

3) Vacuum heating, or heating by means of steam at a pressure lower than atmospheric pressure, the heating system being connected in series or in parallel with the condenser. The amount of water sent to the condenser is regulated according to the requirements of the heating system. This combination is suited rather to reciprocating engines which are less affected than turbines by variations in the vacuum.

4) Hot air heating, in which the steam gives up its latent heat to air which is then sent to the rooms or places to be heated.

If the heat can be used by means of hot water, then the accumulator is an essential part of the installation; but even when the heat is used otherwise regularity in its use is necessary in order to have proper regulation of the combustion. If the supply of steam is not very regular or if there are several sources of supply of steam, or if the time of power production and of heat requirement do not coincide (places heated only in the daytime in plants running twenty-fours a day), it is advisable to place an accumulator between the source of heat (the engines in this case) and the heating system, which makes for better operation and higher efficiency.

At any rate, in certain cases some sort of an accumulator is absolutely necessary to prevent irregular heating when the heating system uses the exhaust from engines working intermittently.

It might be mentioned that at present the use of such accumulators, heated electrically, is being pushed by the electric power companies, which see in it an advantageous method of using offpeak current and improving the load factor of their circuits.

(To be continued)

DOES HARD WORK KILL?

We hear it said when some men die that they worked themselves to death. Dr. James J. Walsh in his splendid book, "Health through Will Power," which you can buy at any bookstore, says according to the Lombard News Letter:

We often hear of hard work killing people, but, as a physician, I have carefully looked into a number of these cases and have never found one which satisfied me as representing exhaustion due to hard work.

"Insidious kidney disease, rheumatic heart disease, the infections, of which pneumonia is a typical example, all these have been the causes of deaths, and not hard work, and they may come to any of us.

"There are just as many accidents as any other of the mischances of life, for it is as dangerous to be run into by a microbe as by a trolley car. Using the will in life to do all the work possible only gives life and gives it more abundantly, and people may rust out, that is, be hurt by rest, much sooner than they will wear out."

Certainly this is good news to business men who are driving themselves night and day. Of course, it must be understood that the man who does the same thing over and over again gets into a rut. Wise men rest themselves, not by loafing but by turning from one job to another, which gives them the benefits of variety.

Life without the oil of love is like an empty lamp.

Strength is often expressed in the terms of **gentleness**.

American Pulpwoods

The Suitability of Various Species of American Woods for Pulp and Paper Production

By SIDNEY D. WELLS

(Continued from last issue.)

LONG LEAF WILLOW — *Salix fluviatilis.* Wt. 23 lbs. Fiber .7 m.m.

Range — Quebec (Lake St. John and Island of Orleans) and southward through western New England to the Potomac River; northwestward to the Arctic Circle (valley of Mackenzie River) and British Columbia and California; southward in the Mississippi River basin to northern Mexico and lower California.

Common Names — Sandbar willow (R.I., Miss., Cal., Kans., Nebr., Minn., S. Dak., Wis., Ont.); Longleaf willow (Ala., Kans., Mich.); Long-leaved willow (Tenn., Minn., Nebr., Colo., Cal., Idaho, Wash.); Narrow-leaved willow (Neb.); Shrub willow (Nebr.); White willow (Mo.); Red willow (Mont.); Osier willow (Mont.); Willow (Vt., N.Y., Ky., Ind., Miss., Tex., Cal., Nev., Utah, Mont.)

Sulphite Pulp.

Yield — 1,100 lbs.

Character — Easily pulped and bleached; Very weak and poor color.

Possible uses — Same as aspen.

Soda Pulp.

Yield — 1,030 lbs.

Character — Easily pulped; Rather difficult to bleach; Soft opaque and short fiber.

Possible uses — Same as aspen.

Mechanical Pulp.

Same as aspen.

RED ALDER — *Alnus Oregona.* Wt. 23 lbs. Fiber 1.2 m.m.

Range — From Sitka (through islands and coast ranges of British Columbia western Washington, and Oregon) to California (coast ranges to Santa Inez Mountains, near Santa Barbara).

Common Names — Alder (Cal., Oreg.); Red Alder (Cal., Oreg.); Western or Red Alder.

Soda Pulp.

Yield — 1,160 lbs.

Character — Soft; a little harder to bleach than aspen.

Possible uses — Same as aspen.

Mechanical Pulp.

Probably the same as aspen.

BALSA — *Ochroma lagopus.* Wt. 7 lbs.[5] Fiber 1.33 m.m.[6]

Range — Tropical America, Cuba, Jamaica and Porto Rico.

Common Names—Lanero (Cuba); Corkwood; Downtree, Dum and Bombast Mahoe (Jamaica.)

Sulphate Pulp.

Yield — 280 lbs.

Character — Easily pulped and bleached.

Possible uses — Because of extremely low yield per cord, it is probable that this wood has no value as a source of pulp.

THE MAPLES

BOXELDER — *Acer negundo.* Wt. 30 lbs. Fiber -

Range — Vermont (Lake Champlain and Winoski River), New York (Cayuga Lake), eastern Pennsylvania, and south to Florida (Hernando County); Northwestward to Winnipeg (Dogs Head Lake and along southern branch of the Saskatchewan River), to the eastern base of the Rocky Mountains (In British America), to Montana (Rocky Mountains), Utah (Wasatch Mountains), western Texas, New Mexico, and eastern Arizona.

Common Names — Boxelder (Vt., Mass., R.I., Del., N.Y., N.J., Pa., Va., W. Va., N.C., S.C., Ala., Fla., Miss., La., Tex., Ark., Mo., Ariz., N. Mex., Mont., Ill., Ind., Wis., Ohio, Mich., Iowa, Kans., Nebr., N. Dak., S. Dak., Minn.); Ash-leaved maple (R.I., Mass., N.J., Pa., Del., Va., S.C., La., Tex., Ill., Wis., Iowa, Ont., Kans., Nebr., Mont., N. Dak., Mich., Minn.); Cut-leaved maple (Colo.); Negundo maple (Ill.); Red river maple (N. Dak.); Three-leaved maple (Pa.); Black ash (Tenn.); Stinking ash (S.C.); Sugar ash (Fla.); Water ash (Dakotas).

Sulphite Pulp.

Probably the same as red maple.

Soda Pulp.

Yield — 1,300 lbs.

Character — Easily pulped; Rather difficult to bleach; Soft opaque and short fiber.

Possible uses — Same as aspen.

Mechanical Pulp.

Probably the same as black gum.

RED MAPLE — *Acer rubrum.* Wt. 30 lbs. Fiber .8 m.m.

Range — From New Brunswick, Quebec, and Ontario (latitude 49°) to Florida (Caloosa and Indian rivers); west to Lake of the Woods, eastern Dakota and Nebraska, Indian Territory, and Texas (Trinity River).

Common Names — Red maple (Me., N.H., Vt., Mass., R.I., Conn., N.Y., N.J., Pa., Del., Va., W. Va., N. Ca., S. Ca., Ga., Fla., Ala., Miss., La., Tex., Ky., Mo., Ill., Ind., Ohio, Ont., Iowa, Wis., Nebr.); Swamp maple (Vt., N.H., Mass., Conn., R.I., N.Y., N.J., Pa., Del., N.C., S.C., Fla., Ala., Miss., La., Tex., Mo., Ind., Ont., Minn.); Soft maple (Vt., Mass., N.Y., Va., Miss., Mo., Ill., Ind., Ohio, Ont., Mich., Kans., Nebr., Minn.); Water maple (Miss., La., Tex., Ky., Mo.); White maple (Me., N.H.); Shoe-peg maple (W. Va.); Erable (La.); Ah-weh-hot-kwah — "Red Flower" (Onondaga Indians, N.Y.); Scarlet maple (Tex.).

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[5] From comparatively few specimens.

[6] The result of 50 measurements.

Sulphite Pulp.
Yield — 1,450 lbs.
Character — Easily pulped and bleached; Very weak and rather poor color.
Possible uses — Same as aspen.

Soda Pulp.
Yield - 1,300 lbs.
Character — Easily pulped and bleached; Soft opaque and short fiber.
Possible uses — Same as aspen.

Mechanical Pulp.
Probably the same as black gum.

SUGAR MAPLE — *Acer saccharum.* Wt. 35 lbs. Fiber

Range — From southern Newfoundland (along the St. Lawrence and Saguenay rivers, Lake St. John, and northern borders of Great Lakes) to Lake of the Woods and Minnesota; south (through the Northern states and on the Allegheny Mountains) to northern Georgia and western Florida; west to eastern Nebraska, eastern Kansas, and eastern Texas.

Common Names — Sugar Maple (Me., N.H., Vt., Mass., R.I., Conn., N.Y., N.J., Pa., Del., Va., W. Va., N.C., S.C., Ala., La., Ky., Mo., Ohio, Ill., Ind., Iowa, Kans., Nebr., Mich., Minn., Wis., Ont.); Hard maple (Vt., R.I., N.Y., N.J., Pa., Va., Ala., Ky., Mo., Kans., Nebr., Ill., Ind., Iowa, Mich., Ohio, Minn., Ont.); Sugar-tree (Me., Vt., R.I., Pa., Va., W.Va., Ala., Miss., La., Ark., Ky., Mo., Ill., Ind., Ohio, Kans.); Rock maple (Me., Vt., N.H., Conn., Mass., R.I., N.Y., Tenn., Ill., Mich., Iowa, Kans., Wis., Minn., Ont.); Black maple (Fla., Ky., N.C.); Maple (S.C.).

Sulphite Pulp.
Yield — 1,540 lbs.
Character — Easily pulped and bleached; Very weak but excellent color.
Possible uses — Same as aspen.

Soda Pulp.
Yield — 1,500 lbs.
Character — More difficult to pulp and bleach than aspen; Soft, opaque, short fiber.
Possible uses — Same as aspen.

Mechanical Pulp.
Probably similar to black gum.

THE BIRCHES, BEECHES, ETC.

PAPER BIRCH — *Betula papyrifera.* Wt. 34 lbs. Fiber 1.2 m.m.

Range — From Labrador to Hudson Bay (Southern Shores), Great Bear Lake, Yukon River and coast of Alaska; southward to New York (Long Island) and northern Pa., central Michigan, and Minnesota, northern Nebraska (Bluffs of Niobrara River), Dakota (Black Hills), northern Montana, and northwestern Washington (near Seattle).

Common Names — Paper Birch (N.H., Vt., Mass., R.I. Conn., N.Y., Wis., Mich., Minn., Ont.); Canoe birch (Me., Vt., N.H., R.I., Mass., N.Y., Pa., Wis., Minn., Mich., Ont.); White birch (Me., N.H., Vt., R.I., N.Y., N.J., Wis., Minn., Mich., Nebr., Ont.); Silver birch (Minn., N.Y.); Large white birch (Vt.); Boleau (Quebec).

Sulphite Pulp.
Yield — 1,500 lbs.
Character — Easily pulped; Difficult to bleach; Poor strength and color.
Possible uses — Few.*

Soda Pulp.
Yield — 1,350 lbs.
Character — More difficult to reduce than aspen; Soft, easily bleached and opaque.
Possible uses — Similar to aspen.

Mechanical Pulp.
Yield — 3,000 lbs.
Character — Short fiber and poor strength; Pinkish color.
Possible uses — As a filler with long fibered stocks.

YELLOW BIRCH — *Betula latea.* Wt. 34 lbs. Fiber 1.5 m.m.

Range — From Newfoundland and along the northern shores of St. Lawrence Gulf to Abitibi Lake and Rainy River; southward to northern Minnesota and through the Northern States to eastern Tennessee, North Carolina, and Delaware.

Common Names — Yellow birch (Me., N.H., Vt., Mass., Conn., R.I., N.Y., N.J., Pa., N.C., S.C., Ill., Mich., Wis., Minn., N. Dak., Ont.); Gray birch (Vt., R.I., Pa., Mich., Minn.); Swamp birch (Minn.); Silver birch (N.H.); Merisier (Quebec); Merisier Rouge (Quebec.)

Sulphite Pulp.
Yield — 1,590 lbs.
Character — Easily pulped; Easily bleached; very weak; Good color.
Possible uses — Same as aspen.

Soda Pulp.
Yield — 1,360 lbs.
Character — More difficult to reduce than aspen; Soft, easily bleached.
Possible uses — Same as aspen.

Mechanical Pulp.
The same as paper birch.

GEECH — *Fagus atropunicea.* Wt. 36 lbs. Fiber 1.1 m.m.

Range — Nova Scotia to Lake Huron (north shores) and northern Wisconsin; south to western Florida and west to southeastern Missouri and Texas (Trinity River).

Common Names — Beech (Me., N.H., Vt., Mass., R.I., Conn., N.Y., N.J., Pa., Del., Va., W.Va., N.C., S.C., Ga., Ala., Fla., Miss., La., Tex., Ark., Ky., Mo., Ohio, Ill., Ind., Mich., Nebr., Minn., Ont.); Red beech, (Me., Vt., Ky., Ohio); White beech (Me., Ohio, Mich.); Ridge Beach, (Ark.).

Soda Pulp.
Yield — 1,530 lbs.
Character — Slightly more difficult to reduce than aspen; soft, easily bleached.
Possible uses — Same as aspen.

BLACK GUM — *Nyssa sylvatica.* Wt. 30 lbs. Fiber 1.7 m.m.

Range — From Maine (Kennebec River) to Florida (Kissimmee River and Tampa Bay) and west to southern Ontario, southern Michigan (up to Gratiot County , southeastern Missouri, and Texas (Brazos River.)

Common Names — Black gum (N.J., Pa., Del., Va., W.Va., N.C., S.C., Ga., Ala., Fla., Miss., La., Tex., Ill., Ind.); Sour gum (Vt., Mass., R.I., N.Y., N.J., Pa., Del., Va., W.Va., S.C., Fla., Tex., Ohio, Ind., Ill.) Tupelo (Mass., R.I., N.J., Del., S.C., Ala., Fla., Miss., Tex., Ill., Ohio); Pepperidge (Vt., Mass., R.I., N.Y., N.J., S.C., Tenn., Mich., Ohio, Ont.); Wild Pear tree (Tenn.); Yellow Gumtree (Tenn.), Gum (Md.); Stinkwood (W.Va.); Tupelo gum (Fla.

Soda Pulp.

Yield — 1,300 lbs.

Character — Soft. A little harder to cook and bleach than aspen.

Possible uses — Similar to aspen.

Mechanical Pulp.

Yield — 2,610 lbs.

Character — Very short but tough fiber; Very white color.

Possible uses — As a filler with longer fibered stock.

COTTON GUM — *Nyssa aquatica.* Wt. 29 lbs. Fiber 1.6 m.m.

Range — Coast region from southern Virginia to northern Florida, and through the Gulf States to Texas (Nueces River); northward through Arkansas, west Tennessee and Kentucky, southern and southeastern Missouri to southern Illinois (lower Wabash River).

Common Names — Large tupelo (Ala., La., Tex.); Tupelo gum (Ga., Ala., Miss., La.); Sour gum (Ark., Mo.); Swamp tupelo (S.C., La.); Cotton gum (N.C., S.C., Fla.); Tupelo (N.C., S.C.); Wild olive tree (La.); Olivier a grandes feuilles (La); Oliver tree (Miss.); Bay poplar (Ala.)

Sulphite Pulp.

Yield — 1,160 lbs.

Character — Easily pulped; Easily bleached; Poor strength; Fair color.

Possible uses — Same as aspen.

Soda Pulp.

Yield — 1,200 lbs.

Character — Soft, but harder to bleach than aspen.

Possible uses — Similar to aspen.

RED GUM — *Liquidambar styraciflua.* Wt. 27 lbs. Fiber 1.6 m.m.

Range — From Connecticut (Fairfield County) to southeastern Missouri and Arkansas; south to Florida (Cape Canaveral and Tampa Bay) and Texas (Trinity River.)

Common Names — Sweet gum (Mass., R., I., N.Y., N.J., Pa., Del., Va., W.Va., N.C., S.C., Ga., Ala., Fla., Miss., La., Tex., Ark., Ky., Mo., Ill., Ind., Ohio); Liquidambar (R.I., N.Y., Del., N.J., Pa., La., Tex., Ohio, Ill.; Red gum (Va., Ala., Miss., Tex., La.); Gum (Va.); Gumtree (S.C., La.); Alligator-wood (N.J.); Gilsted (N.J.); Starleaved gum; Satin walnut (lumber markets.)

Sulphite Pulp.

Yield — 1,190 lbs.

Character — Easily pulped; Difficult to bleach; Very poor strength; Dark colored.

Possible uses — Few.

Soda Pulp.

Yield — 1,080 lbs.

Character — A little more difficult to reduce than aspen; Soft and hard to bleach.

Possible uses — Same as aspen.

CUCUMBER TREE — *Magnolia acuminata.* Wt. 27 lbs. Fiber 1.3 m.m.

Range — From Western New York through southern Ontario to southern Illinois and south in the Appalachian Mountains to southern Alabama (Stockton) and northeastern Mississippi (Meridian); central Kentucky and Tennessee (near Nashville and eastern part of State); northeastern, southern and southwestern Arkansas.

Common Names — Cucumber-tree (R.I., Mass., N.Y., Pa., D.C., (cult.); N.C., S.C., Ala., Miss., La., Ark., Ky., W.Va., Ohio, Ind., Ill.); Mountain Magnolia (Miss., Ky.); Cucumber (W.Va.); Black lin (W. Va.); Magnolia (Ark.); Pointed-leaved magnolia (lit.).

Sulphite Pulp.

Yield — 1,250 lbs.

Character — Easily pulped; Somewhat weak; Difficult to bleach; Dark colored.

Possible uses — Few.

Soda Pulp.

Yield — 1,200 lbs.

Character — A little harder to reduce and bleach than aspen.

Possible uses — Same as aspen.

Mechanical Pulp.

Probably similar to black gum.

SWEET MAGNOLIA — *Magnolia glauca.* Wt. 39 lbs. Fiber 1.3 m.m.

Range — Massachusetts (Gloucester, Essex County); Long Island (Turtle Pond, Suffolk County); from New Jersey to Florida (Biscayne Bay on the east coast, and to Tampa Bay on the west coast); west in the Gulf region to Texas (Trinity River.)

Common Names — Sweet Bay (Mass., R.I., Pa., N.J., N.C., S.C., Ala., Fla., Miss., La., Ark., Mo.); White Bay (N.C., S.C., Ala., Fla., Miss., La.); Swamp laurel (Mass., N.C., Ga., Miss.); Swamp sassafras (Del., Pa., Tenn.); Swamp magnolia (N.J., Pa., Tenn.); Magnolia (N.J., Del., Pa.); White laurel (Del., Miss., La.); Beaver-tree (Del., S.C., Miss.): Bay (S.C.).

Sulphite Pulp.

Yield — 1,680 lbs.

Character — Easily pulped and bleached; Fair strength; Poor color.

Possible uses — Can be used without pulps from conifers in manufacturing of book, magazine, and similar papers.

Soda Pulp.

Yield — 1,680 lbs.

Character — Easily pulped; Rather difficult to bleach; Soft opaque fiber.

Possible uses — Same as aspen.

Mechanical Pulp.

Probably similar to black gum.

(To be Concluded)

H. B. Wadsworth, exporter and importer of pulp and paper, has left New York for a business tour of Japan and the Orient from which he does not expect to return until late in the Fall.

The greatest of all faults is to be conscious of none.—Carlyle.

Woodlands Section

OTTAWA SESSION OF CONFERENCE CLOSES

Colonel Henry Solon Graves, director of the Yale Forest School, delivered the first paper at the Saturday morning session of the British Empire Forestry Conference, consisting of an inventory and review of the forest and particularly the soft wood resources of the United States.

He stated that although three-quarters of the original soft wood forests of the United States had been cut over, it had been estimated that that country still contained more soft wood timber than any other country except Russia.

The States is using her timber three or four times as fast as it is growing, he continued. In addition to the problem of bridging this gap, the country is faced with the fact that only one-fifth of the country's forest lands is publicly owned. The remaining four-fifths has been alienated to private owners.

Colonel Graves pointed out that superficially the country still has enormous resources. Nearly two thousand billion feet might seem inexhaustible to the lay mind, but economically, the fact that most of the stock lay over 2,000 miles from the point of ultimate consumption, meant that the country was in a serious predicament.

C. E. Legat, delegate from South Africa, asked Colonel Graves, whether, in estimating the requirements of the United States and the hope of meeting same, account had been taken of the fundamental fact that population doubles every 50 years. Colonel Graves replied that he was optimistic of one thing only, namely, there was enough absolute forest land in the United States to supply their requirements if handled under proper forestry principles. He pointed out that the coniferous timber was being cut today at a rate amounting to eight and a half times the annual growth.

Colonel Graves estimated that, in all, the country contained 1,830 billion board feet of timber suitable for the manufacture of lumber, and 940 million cords of pulpwood. Of this total, douglas fir leads with a total stock of 595 billion board feet, followed in order of quantity by the western yellow pines, the southern pines and the spruces and firs.

Lord Lovat, chairman of the conference, asked Colonel Graves if it were not true in the United States that in a good many of the outlying areas the settlers could not eke out an existence by agriculture alone, but were compelled to supplement their activities by work in the forest.

Colonel Graves, in reply, stated that in the rich Central States, agriculture could sustain the community, but that in other parts of the country, where a large proportion of the land area was non-agricultural, there was certainly dependence on the forest for work. He pointed out that in Northeastern States, where forests had been cut out, agriculture had deteriorated, and abandoned farms had resulted. In the State of Connecticut the total area of which is only three million acres, there was today 900,000 acres less of improved farm lands than was the case 40 years ago, when forest industries were present to create a market. In the northeast generally the decrease was seven million acres from that under cultivation 40 years ago. The re-establishment of forests and consequently of forest industries would, said Colonel Graves, mean the re-establishment of agriculture in that part of the country.

Among others contributing to the debate which arose were Sir James Calder, Professor Troup, Fraser Story and R. L. Robinson, from Great Britain; Mr. Forbes, from Ireland; R. D. Craig and Mr. Leavitt, of Canada and the Chairman Lord Lovat. The chairman stressed the necessity of periodic reviews of the situation with respect of soft wood resources. Such reviews could focus the general trend of the situation and would provide a check on estimates of annual growth, which are always difficult to obtain with any degree of accuracy.

The Ottawa meetings of the conference closed with Saturday's sessions, but further debate will be held on the train and at various points en route to the Pacific coast, where the final session will be held at Victoria, B. C. This afternoon the delegates were given a motor ride around the city, and in the evening were the guests of Prime Minister Mackenzie King and the Hon. W. S. Fielding, minister of finance, at a dinner held at the Country Club.

IS THE PAPER INDUSTRY PRACTISING FORESTRY?

By O. M. PORTER

Secretary-Treasurer, The Woodlands Section of the American Paper and Pulp Association

The Woodlands Section has prepared a report form for use by the managers of the woods department of pulp and paper companies in indicating the actual practice of forestry in their operations. Copies of this will be sent shortly to all members of the Woodlands Section, whose co-operation is requested in this project to develop a report showing the status of the paper industry as regards the protection and development of its basic raw material — pulpwood.

German Pulpwood

Recent pulpwood auctions resulted in the following prices:

	First		Second		Third	
Class	Marns	Dollars	Marks	Dollars	Marks	Dollars
Rough	410,000	5.30	340,000	4.45	280,000	3.60
Peeled	444,000	5.75	375,000	4.85	300,000	3.90

At the present value of the mark, transportation costs in Germany are almost negligible. The following covers pulpwood and logs, with the dollar at 100,000 marks:

Miles	Rate Per Short Ton
100	$0.32
200	0.54
300	0.72

The following statistics from publications by the Austrian Secretary of Commerce indicate that its paper industry is now operating to approximately 80 per cent of its pre war capacity

CAR LOAD PRODUCTION
10 Long Tons

Product	1913	1922
Paper	18,843	15,108
Cellulose	17,136	10,187
Ground Pulp	7,514	7,159
Paste Board	7,005	5,155

Koehler Thinning Theory

The Koehler theory of thinning holds that for every sound tree of every species, regardless of age and site conditions, there is a fixed ratio between height and width of crown. This has been worked out for two of the principal European species as follows:

Picea excelsa	Ratio is 6:1
Fagus sylvatica	Ratio is 5:1

Thus, a spruce tree 90 feet tall should have a crown 15 feet wide; in other words, covering 15 by 15 square feet of horizontal crown area.

If this theory is correct, it provides an automatic control for thinnings. The number of trees to the acre would be 43,560 divided by W squared, where W is the width of the crown or 1/6 the length of the tree; so that the normal stand per acre, where the total average height of the tree is indicated as H would be 43,500 x 36 divided by H squared.

In application, all that is necessary is the reduction of the number of trees per acre, in accord with this formula which, for spruce, would work out somewhat as follows:

Average Height	No. Per Acre	Removable Through Thinnings
30′	1,740	
40′	980	760
50′	675	205
60′	435	190
70′	320	115
80′	245	75
90′	190	55
100′	156	34

Of course, there are many objections to this theory. It is not applicable to mixed stands; it does not differentiate between predominate and suppressed trees; it does not produce full-length crowns suitable for abundant cone production. It does, however, provide for increased yield, through thinnings, and thus makes possible early returns on a long time, expensive rotation.

About fifty American manufacturers of fine precision instruments of various types all the way from high pressure gauges to ultrafine chemical balances, will show their goods at this year's Chemical Exposition in New York, according to early estimates. More than an equal number of manufacturers of all kinds of chemical and allied plant equipment such as centrifugals, screens, crushing machinery, pumps, acid-proof ware, valves, gears, pipes, drying equipment, filter presses and the like, will show their goods.

COMPETITION OF PAPER MILLS IN JAPAN

The Japan Paper Association embraces twelve leading paper mills such as, Oji, Fuji, Mitsubishi, Kyushu, Chuo, Kokura, Hokuetsu, Karafuto, Umedzu, Kumano, Nakanoshima and Yukosha Paper Mills There are nine strong paper mills not belonging to the Association that have passed through the business depression, while their comrades passed out of existence. And these are, Chugoku, Nihon, Hokkai Kogyo, Inui, Nishino, Tomoegawa, Takano Yamagata and Toyo paper mills, and producing printing and Japan simile paper. These non members are competing with the Association members mills by underselling 5 to 10 per cent less from those prices maintained by the members. Since the members mills established an associated pulp sales office, in September 1922 those non-members mills have had to compete in the raw material as well which is the most difficult problem they are now facing, as these non-members have no pulp producing company among them. It is, therefore, seriously considered by them whether to join the Association, or to form a separate guild in order to compete advantageously with the Association mills, as up to now these non-members have had no definite agreement among them, but competing with the Association mills, each safe-guarding its interest which unintentionally are finding and taking an uniform step. The most severe competition is in cigarette paper. The Toyo Paper Mill at Osaka is making this paper regularly supplying to the Government Tobacco Monopoly Bureau almost exclusively. The Oji Paper Mill's Osaka branch, an Association mill, is now contemplating to enlarge its cigarette paper plant there in order to compete with the Toyo Mill, non-member of the Association. Not only in the high grade paper, but a severe competition is raging even in straw board. What would be the outcome of these severe competitions between the Association members and non-members are worth while to be watched.

Extensions of Plants Contemplated by Paper Mills in Japan

Extensions and enlargement of plants contemplated during the war time by the leading paper mills in this country have been suspended by the general business depression which came along after the war, but the revival of the paper market since last year is making possible the completion of such contemplated extensions. Some petty mills have vanished during this depression period, and even larger mills have suffered considerably, but these large mills have had sufficient reserves to avoid such fate as the smaller mills had to face. There are, on the contrary extensions that are under contemplation by some of the large paper mills. Up to the present those that are known, are the one 142″ news machine to be installed by the Kyushu Paper mill at their Yatsushiro branch plant to be completed during the next year, and one 107″ high grade printing machine by the Mistubishi paper mill at their Nakagawa branch plant to be completed by next April or May, this machine to be of a Swedish make.

The two largest paper mills, the Oji Paper Mill and the Fuji Paper Mill, are contemplating enlargement of their plants. The former by raising debentures in the London market, and the latter by increasing their capital. Even though the present market conditions are far from favorable, the extension schemes should be made while the market conditions are quiet, so as to meet the coming boom or favorable market. The demand of paper in this country will not decrease from the present consumption, but within a short time the present output will not be able to take care of probable future business.

Technical Section

REVIEW OF RECENT LITERATURE

PAPER TESTING

A-14 M-12 Mullen Test Comparison. F. A. CURTIS. **Paper Trade J.** 76, No. 19, 48 (May 10, 1923). Results of Mullen tests on 10 samples of paper by 7 laboratories are tabulated, showing the maximum positive and negative deviations and mean deviations from the average.-A.P.-C.

A-14 M-12 Report on Schopper Folding Machines. HELEN U. KIELY. **Paper Trade J.** 76, No. 19, 45-48 (May 10, 1923). — A report is presented of a cooperative investigation into the accuracy of the machine, tolerances allowable and value of the results in valuating paper. (1) The relative humidity at which the paper is run is the source of greatest error. (2) The error due to paper, machine, and method of operation is less in testing paper cut in the cross-machine direction. (3) A machine tests itself within about 10% as a maximum except in an occasional instance, and wider variations must be attributed to the paper or method of operation. (4) Testing at 45% of 55% relative humidity would probably be preferable to the present practice of 65%. (5) A tolerance of approximately 30% in the cross direction must be allowed, so that the value of the folding number in purchasing paper on specifications is questioned. (6) If a folding number is specified, a tolerance above and below should be allowed. The following recommendations are made: (1) A standard instrument should be decided upon for determining relative humidity. (2) Paper should be tested only in the cross-machine direction and no specification for machine-direction fold should be given. (3) Work should be done on collecting data before and after the paper is tub sized. (4) Work should be done on the folding machine after removing one of the plates, thus giving a single instead of a double fold.-A.P.-C.

A-14 Examination of Blotting Paper. G. DALEN. **Mitt, Materialprufungsamt** 5 (1922): **Papierfabr.** 21, 192-196 (Apr. 8, 1923). Blotting paper is tested by passing it between two rolls together with a strip of sized paper containing fresh ink. The two strips, 3 cm. wide and 30 cm. long, come together just as they pass between the rolls, the blotting paper being the upper one. The rolls are each 3.7 cm. in length and 3.4 cm. in diameter and the upper one exerts a pressure of 0.6 kg. on the lower. The paper passes thru the rolls at a speed of 10 cm. per second. Ink is dropped on the lower strip by means of a burette held 2 cm. above its surface. The length of the blot is measured in mm. Comparison of the usual capillary absorption test, used for blotting paper, with the test just described shows little difference, but the former is more uncertain. Thirty-eight tests are tabulated. (Also in **Wochbl. Papierfabr.** 54, 1304-1306 (May 12, 1923).-J.L.P.

A-15 An Improved Method for the Determination of Alpha-, Beta- and Gamma-Cellulose. M. W. BRAY and T. M. ANDREWS. **Ind. Eng. Chem.** 15, 377-378 (Apr. 1923). The authors describe a modified procedure in which the alpha-, beta- and gamma- celluloses are determined volumetrically instead of gravimetrically. One gram of dry Cross and Bevan cellulose or sample of pulp is triturated with 25 cc. of 17.5% caustic soda solution till the mass is homogeneous, allowed to stand 30 min., and filtered with suction through an alundum (porosity R.A.98) or a Gooch crucible. After the insoluble is sucked practically dry it is loosened with a glass rod and washed, first with 4% sodium hydroxide (50cc.) and then with about 300 cc. of cold distilled water in small portions. Remove the residue from the crucible, dissolve in about 30 cc. of 72% sulphuric acid, make up to 100 cc. with 72% acid, to a 100 cc. aliquot add 10 cc. of standard potassium dichromate solution (90 g. per liter) and 60 cc. of 72% acid, boil gently for exactly 5 min., cool in ice and titrate the excess of dichromate with standard ferrous ammonium sulphate (159.9 g. per liter). The dichromate should be standardized against cellulose obtained by the Cross and Bevan chlorination method from sulphite pulp. The filtrate from the alpha-cellulose is diluted to 400 cc. and divided into equal parts. One part is diluted to 250 cc. To a 25 cc. aliquot add 5 cc. of standard dichromate and 60 cc. of 72% acid and treat as above, the result giving the sum of the beta-and gamma-cellulose. Precipitate the beta-cellulose from the other 220 cc. aliquot, (diluting to 250 cc. in a volumetric flask), let stand till the precipitate settles, pipette off a 25 cc. aliquot of the supernatant liquid, and treat as in the case of the beta-plus gamma-cellulose determination.-A.P.-C.

PROCESS CONTROL

C-1 E-1 G-1 H-1 K-1 Testing and Control Process in Paper Making. M. A. KRIMMEL. **Paper Trade J. 76** No. 18, 57-62 (May 3, 1923). A brief outline of the raw material, process, and finished product control tests carried out at the Hammermill plant.-A.P.-C.

MECHANICAL PULP

D-4 Process of Making Mechanical Wood Pulp. E F. MILLARD. U.S. pat. 1,413,180, April 18, 1922. — Same as Can. pat. 215,314 Jan. 24, 1922. See **Pulp and Paper** 20, 888 (Oct. 12, 1922). **(Paper Trade J.** 74, No. 20, 54, (May 18, 1922).-A.P.-C.

D-4 Studies of Mechanical Paper Technology. F. BOHROFF. **Bumazhnaia Promyshlenost, I.** Nos. 2-3, 193-212 (Sept. - Dec. 1922). Data are given to show that 40 per cent of the total power consumed in the world's pulp and paper production goes for wood grinding. Even a small saving in the power consumed in the grinding operation would release a large amount of energy for other uses. The factors entering the grinding operation are combined with a mathematical equation depending upon the pressure **n** per sq. cm.. of the grinding roll. Giving definite values a curve can be drawn very similar to the one obtained by Kirchner empirically el as (**Papier III A**, pa 57), proving that the mathematical formula is correct. M.L.C.

D-4 Grinding at High Temperatures. HOYER. **Papierfabr.** 21, 213-216 (Apr. 22, 1923). A general discussion of grinding wood at high temperatures.-J.L.P.

BLEACHING

H-4 Continuous Production of Chloride of Lime. OTTO NYDEGGER. Ger. pat. 370,841. **Papierfabr.** 21, 271-272 (May 27, 1923). Chlorine gas is conducted into an absorption apparatus in which finely divided lime is being stirred. The unabsorbed warm gas as cooled and again put through the absorption apparatus.-J.L.P.

H-5 Bleach Studies on Wood pulps. II. CARL G SCHWALBE and HERMANN WENZL. **Papierfabr.** 21, 268-270 (May 27, 1923). During the bleaching process a considerable quantity of carbon dioxide is, evolved, amounting to 0.26-0.28 g. CO_2 per 100 g. of pulp when treated with 1 g. of chlorine. This leads to the formation of $CaCO_3$ consequently a depression of the H. concentration, thus slowly bringing the bleaching process to a standstill. By heating the bleach bath to 30-35°C. and by subjecting the stock to a vigorous movement, the solubility of the CO_2 is considerably decreased, the formation of the deleterious bicarbonate prevented and the bleaching action accelerated. An air blast has only a mechanical effect in that it removes the CO_2.-J.L.P.

PREPARATION OF PAPER PULP

K-4 Recovering Constituents of Waste Bituminous Felt Products. L. KIRSCHBRAUN. U.S. pat. 1,417,840, May 30, 1922. The material is mechanically disintegrated in the presence of a hot emulsifying agent such as clay and water which serves to soften the material and reduce it to a uniform pulp.-A.P.-C.

K-7 Beater. SIGURD SMITH. Fr. pat. 549,522.—the beater is equipped with two or more bedplates which must be at least 100 to 120mm. from one another. In the space between the bedplates fresh stock is forced into the spaces between the roll fly bars so as to expose a fresh portion of fibers to the beating action of the next bedplate. (See Smith's article on the "Fibrage Theory" of beating in **Paper Trade J.** 75, No. 26, 47-48 (Dec. 28, 1922); 76, No. 1, 49-53 (Jan. 4, 1923); and in **Paper 32**, No. 3, 5-8 (May 9, 1923); No. 4, 5-10 (May 16, 1923).-A.P.-C.

K-7 A New Continuous Beater. Paper Ind. 5, 339-340 (May 1923). — Brief enumeration of the merits of the Murphy hollow midfeather continuous beater for mixed waste paper, which, it is claimed, will prevent all foreign matter from entering the stuff chest and eliminate rags, sticks, strings, wire, etc., from collecting in the valves.-A.P.-C.

K-7 Process of Beating Fibers for the Manufacture of Paper. EMIL RYBERG and P. C. SCHAANNING. Ger. pat. 375,576. **Papierfabr.** 21, 280 (June 3, 1923). To decrease power consumption and to facilitate beating at a high pulp consistency in a conical mill, compressed air or other gas is added to the mixture of fibers and water before it enters or during its progress through the mill.-J.L.P.

K-7 Beating Engines for the Manufacture of Paper. ANON. **Wochbl. Papierfabr.** 54, 1041-1044 (Apr. 14, 1923). Brief descriptions, with sketches, of the Karger, Taylor, Hemmer, Acme, Krons, Wrigley, Umpherston. and Goepel types of beaters.-J.L.P.

K-7 Pulp Disintegrating Machines. ANON. **Wochbl. Papierfabr.** 54, 1239-1241 (May 5, 1923). The Hoffsummer and Kirchner centrifugal beaters are sketched and described.-J.L.P.

K-7 Device for the Treatment of Pulp made from Sedges, Grasses and Reeds. JOHANN J. GAHLER. Ger. pat. 374,192; addition to 370,347. **Papierfabr.** 21. 238, 239 (May 6, 1923). Blunt beater knives are employed to avoid cutting the fibers.-J.L.P.

FILLERS

K-9 Filler for Paper Pulp. G. ACHESON. U.S. pat. 1,419,951, June 20, 1921. —A filler such as white clay is deflocculated preparatory to mixing it with paper pulp. in order to form a mixture with which rosin size and alum may combine.-A.P.-C.

K-9 Loading Paper Pulp. F. REICHARD. Eng. pat. 177,137, Nov. 24, 1921. — Same as Ger. pat. 349,882. See **Pulp & Paper** 20, 702 (Aug. 17, 1922). **(Paper Trade J.** 75, no 4, 53 (July 27, 1922).-A.P.-C.

K-9 Filler for Paper. W. HOSKINS. U.S. pat. 1,424, 306, Aug. 1, 1922. — Powdered calcium sulphate or clay particles are coated with a calcium soap.-A.P.-C.

K-9 Paper Filler. W. N. KOHLINS. U.S. pat. 1,390,927, Sept. 13, 1921. — The composition is formed of precipitated magnesium hydroxide, calcium sulphate, aluminium hydroxide and slaked lime.-A.P.-C.

SIZING

K-10 Engine Sizing Paper. H. M. WHEELWRIGHT. U.S. pat. 1,430,045, Sept. 26, 1922. — Previously boiled soluble modified starch is mixed with rosin size, diluted and mixed with paper pulp in a beater to effect precipitation of the resin in colloidal condition and economize the process with respect to the amount of rosin required.-A.P.-C.

K-10 Sizing Composition. W. P. UPHAM. U.S. pat. 1,392,988, Oct. 11, 1921. — The composition consists of starch hydrolyzed under pressure, rosin, soda, soap, oil, and clay or satin white.-A.P.-C.

K-10 Use of Rosin Size in Paper Making. A. E. LEICESTER. **World's Paper Trade Rev.: Paper** 32, No. 2, 5-6, 24, 26 (May 2, 1923). — Brief discussion of English practice, bringing out some of the difficulties encountered and outlining methods of overcoming them.-A.P.-C.

K-10 Rosin Sizing. J. A. DECEW. U.S. pat. 1,394,610, Oct. 25, 1921. —Five to 15 parts of a melted wax, e.g., paraffin of or vegetable oil, pitch, or hard fat, are mixed with 100 parts of melted rosin to improve the water repellent properties of sizing.-A.P.-C.

K-10 Method for the Emulsification of Rosin soap in Water. O. KAMM assignor to American Writing Paper Co. U.S. pat. 1,415,363, May 9, 1922. — Rosin size containing free rosin is incorporated with water in the proportion required to yield at the operating temperature a practically clear size-in-water emulsion. The emulsion is stable at approximately the boiling point, and can be diluted to an extent by introduction while hot into additional water.-A.P.-C.

K-10 Rosin Sizing. J. A. DECEW assignor to Process Engineers, Inc. U.S. pat. 1,433,124, Oct. 24, 1922.— Rosin for use in sizing paper is incorporated with 5 per cent of rubber by use of a common solvent such as gasoline which is afterwards evaporated.-A.P.-C.

K-10 Sizing for Paper. J. H. RYAN. U.S. pat. 1,434,227, Oct. 31, 1922. — A thin doughy mixture if formed of satin white, clay and water, ground in a pebble mill, mixed with a usual sizing solution, which may contain casein glue or hydrated starch, and the mixture is further ground together to eliminate all grit.-A.P.-C.

(Continued on page 830)

British Trade News

PAPER FROM STRAW PULP

(From Our London Correspondent)

July 27, 1923.

Sir Fred Becker, the pioneer of Canadian pulp in the British market, is at present in Canada on a three months visit. Always bent on something new in the shape of pulp—or the nearest thing to it—he is now investigating the local conditions of the Canadian Prairie Provinces in connection with big-scale experiments about to be carried out at Northfleet, Kent, (England), for turning straw fibre into paper pulp. As is well-known the subject is not new but the fact that Sir Frederick Becker is devoting time and money to it will cause considerable interest in the revival of experiments amongst paper and pulp men on each side of the Atlantic.

Before sailing from England, Sir Fred Becker circulated the following letter to some of the important news papers in the United Kingdom:—"The two-fold importance to the British Empire of an experiment about to be made in Kent, should not escape the attention of those of your readers interested in the deliberations of the coming Imperial Economic Conference (in London during October). Much of the time of that conference will be occupied in debating how best to use to the full advantage our Imperial resources, particularly in regard to developing vast territories at present unpeopled in Australasia, Africa and Canada. The last named Dominion alone possesses 300,000,000 acreas of land suitable for farming, of which as yet only one-sixth is under cultivation. A striking fact about the millions of Canadian acres, which are being farmed is that practically the whole of their enormous annual yield of straw is a waste product; after every harvest it is largely burned. If, however, the experiments to be carried out in Kent are as successful on the big scale as they have been in France, it will in the future be a practicable thing to buy all the straw from the farmer and to turn it into pulp in the Prairie Provinces for the higher grades of paper. Evidently we have here the seedling of a gigantic new industry which will benefit the man on the homestead, give employment to thousands of pulp and paper makers and offer a further attraction to intending emigrants. But it will do more than that; it will bring nearer that ideal of a self-supporting British Empire so eloquently advocated at the last Empire Press Conference."

Sir Fred Becker is on the spot now for Canadians to solve the problems with him. He is deeply interested in the subject and should be given all the help and advice required to save what has hitherto been fuel for the harvest rubbish fire.

The Pulp Situation

The volume of business passing is not great. For chemical pulp prices are inclined to stiffen; for groundwood supplies are finding a splendid channel, thanks to busy newsprint mills, and prices are steady. Quotations in London are about as follows: —

Bleached sulphite (No. 1) £21; Easy bleaching (No. 1) £16 1-2; Sulphite, newsprint quality £15 1-2—£16; unbleached soda (No. 1), £16 1-2; soda kraft, £15 1-2—£15 1-2.

The first half year's imports from all sources have reached 480,597 tons, compared with 305,250 tons for the corresponding period in 1922. The imports for June were 148,526 tons—an increase of 60,751 tons over June 1922. Six months' supplies have arrived as follows: Bleached Chemical (dry) from Finland, 1,369 tons (447 for 1922); Sweden, 2,004 tons (2,874); Norway 7,972 tons (4,682 tons); Germany, 254 tons (497). Other sources 830 tons (567 tons). Total 12,429 tons compared with 9,067 tons for the same period in 1922.

Unbleached Chemical—From Finland, 32,252 tons (20,648 tons for 1922); Sweden 75,315 (43,198); Norway 39,761 tons (26,852 tons); Germany, 7,555 tons (1,176 tons). Other sources 13,726 tons (4,853 tons). Total, 168,609 tons.

Groundwood (wet)—Sweden 45,977 tons (36,668 tons); Norway 200,679 tons (126,587 tons); Canada 31,264 tons(21,851 tons); other sources, 3,173 tons (2,659 tons). Total 281,093 tons compared with 187,765 tons for the same period in 1922.

The imports of groundwood (dry) were 11,908 tons, an increase of 8,783 tons over 1922.

The increase in the case of Canada is notable and it is hoped the second half of the year will see another increase from the Dominion. In Scandinavian circles the pulp market is quiet and prices are steady.

Paper and Canadian Wrappings

The imports of paper for the six months ending June 30, reached 5,678,352 cwts. compared with 4,586,518 cwts. in 1922. The exports of the British mills were 2,083,093 cwts. as against 894,957 cwts. in 1922.

Of the imports, there is a reduction in shipments of newsprint from Canada. But packing and wrapping papers from the Dominion arrived in increased shipments, the total 52,130 cwts. comparing very favourably with 39,816 cwts. for the six months in 1922. Shipments from Scandinavia were 974,275 cwts.; Finland 182,533 cwts.; Germany, 480,115 cwts and Belguim 37,502. Canadian wrapping papers are finding a good outlet in the British market, but, of course, it will take considerable time and trouble to beat down the cheap and inferior qualities dumped on the market from Scandinavia.

The prices for papers in England and Scotland are at present a burning subject and British mill owners are complaining of their meagre profits on orders executed. Competition is very keen and this with the price of pulp at present makes it difficult for the British mill to compete with the quotations of the Continent. A noticeable feature of the trade is the great development in wrappings, kraft paper, etc. Canadians should keep a sharp eye on this section of the market and particularly at this time of the year.

Mill Development

William Tod, Junior, (1923), Ltd., has been formed to take over the business of William Tod Junior and Co., Ltd., of Springfield Mill, Polton, and the recently established Indurite Products Co., Ltd. The capital is £190,000. I mentioned some time ago that the Tod firm, as a result of research work, had perfected a process for mill waste and converting it into vulcanite or ebonite. Vulcanite, or ebonite, has a big demand in England. It is produced at a low cost and is most suitable in the case of insulation. The Springfield mill has two papermaking machines and considerable new machinery was installed between 1910 and 1914 at a cost of £30,000

Big Dock Scheme

The London Port authority is going to spend £5,000,000 on a new dock and other works. The works will include improvement to the pulp and timber dock, which will be brought up to modern requirements.

Some Profits

Amongst recent reports on profits from mills are included the following:—Guard Bridge Paper Mill, 5 p. c. on preference shares, 10 p. c. (last year 5 p. c.) on the ordinary.

Colthrop Board Mill, profit £2,244—profit insufficient for dividend to be paid.

PULP AND PAPER NEWS

According to a Montreal Employment Agency, there is a shortage of help in the Ontario and Quebec pulp and paper mills as well as in logging operations. The men required for the pulp and paper industry are of the unskilled character.

Edward Beck, Secretary of the Canadian Plup and Paper Association, and J. N. Stephenson, Editor of the Pulp and Paper Magazine, attended meetings of the Imperial Forestry Conference in Ottawa last week.

The new Ferguson administration in Ontario has already put into effect several economies in connection with the Forests and Lands Department and several others are in contemplation. Arthur W. Roebuck, who had been retained by the Drury Government to investigate certain lumber companies and seek to press cases in the courts against them, has been let out, and the expensive probings have been abandoned. It is stated that this new policy is having a favorable effect on the development of the lumber industry in the province. Another activity of Hon. J. W. Lyons, new Minister of Lands and Forests, is the review of several of the larger timber deals of the late Government. Notable among these are the English River-Backus transaction, and the sale of the Pic and Black Sturgeon limits near Port Arthur on which timber was sold at low prices. These cases have not yet been dealt with in Cabinet Council but will be brought up for review shortly. There is talk of the cancellation of some of the contracts, not that operations commenced may be terminated, but that more satisfactory prices for timber sold at too low prices may be realized.

S. J. Frame, of Toronto, prominent through his secretarial work for various paper trade organizations, has gone on a pleasure trip to Great Britain where he will enjoy a well-earned holiday for some weeks.

George Carruthers, Toronto, head of the Interlake Tissue Mills, Limited, Thorold, Ont., was in Montreal last week attending a meeting of the tissue paper section of the Canadian Pulp and Paper Association.

The Abitibi Power and Paper Company, Iroquois Falls, Ont., are taking steps towards the organization of a safety association among the mills' forces and the secretary-engineer, of the Ontario Pulp and Paper Makers' Safety Association, A. P. Costigane, will shortly visit the plant to help map out a plan of campaign.

A. P. Costigane, secretary-engineer of the Ontario Pulp and Paper Makers' Safety Association, has returned to Toronto after a pleasant ten-days vacation spent at Big Bay Point, Lake Simcoe. While there Mr. Costigane was active in the organization of a fancy dress ball at which a nice sum was realized for the Fresh Air Fund for children.

H. C. Woods, general manager of Warwick Brothers and Rutter, Limited, manufacturing stationers, Toronto, returned to that city last week after a couple of months spent mostly in England. Mr. Woods' many friends will be pleased to learn that he is much improved in his general health and that he has regained most of his accustomed pep and vigour. While in the Old Land Mr. Woods visited many of the paper institutions in search of new ideas with the result that he is more deeply impressed than ever with the pre-eminence of Canada as a producer of paper, of converted paper and of selling and business methods generally. In conversation with the Pulp and Paper Magazine of Canada Mr. Woods declared that the Canadian market could supply everything necessary in the way of paper and paper products and manufactured lines. "Our Canadian paper trade can sell goods in the British market but there is nothing there in paper and paper products that we have to buy," is the way he put it.

S. F. Duncan, secretary-treasurer of the Provincial Paper Mills, Limited, Toronto, and Charles Buss, of Thorold, superintendent of the St. Lawrence and Montrose Divisions of the company, left Toronto last week for Port Arthur on a visit of inspection to the new book paper mill which is now reported to be running at full capacity.

C. Smith, head of Brantford Stationers, Limited, was a caller on the paper trade in Toronto last week.

The Interlake Tissue Mills, Limited, have just put on the market a neatly made up carton containing 100 bleached white folded Interlake crepe paper napkins so that the thrifty housewife can now buy her box of paper napkins as she would purchase her box of matches. The package is also of benefit to the retail grocer or other dealer for it is tightly sealed and impervious to shelf wearing. It is designed for continuous use in the household where the napkins will be drawn from the package as required instead of lying loose under the the old system of buying loosely by quantities. The novelty promises to be a popular one in the tissue paper trade.

J. O. McKerrow, traffic manager of the Abitibi Power and Paper Company at Iroquois Falls, Ont., was sent up for trial by the Barrie, Ont., police magistrate last week on a charge of manslaughter in connection with the death of S. T. Dunsmore who received fatal injuries when he was struck by Mr. McKerrow's automobile on June 17. Mr. Dunsmore was crossing the provincial highway in front of his own gate near Crown Hill just after getting out of another automobile, when he was struck by the McKerrow car. The Coroner's' jury did not place the blame on anyone and the defence counsel, for this reason, endeavored to have further action dropped. The Crown, however, decided to press the matter. The accused will come up for trial on Sept. 25 and in the meantime is out on $8,000 bail.

The Mattagami Pulp and Paper Company's plant at Smooth Rock Falls, Ont., operated at full capacity during July and turned out a little better than 4,000 tons of unbleached sulphite pulp. The company just now is relining the digester and it is expected that the two Canadian Barking Drums now being installed will be in operation by Sept. 1.

With the placing in commission of the new wrapping paper machine the program of expansion at the mill of the Dryden Paper Company, at Dryden, Ont., is now practically complete. The daily capacity of the machine is from 10 to 15 tons of paper, bringing the total capacity of the plant to 50 tons daily of heavy and light weight kraft and wrapping papers. The pulp mill has a daily capacity of 75 tons of kraft pulp. The wrapping paper has always been the profitable end of Dryden's business and its losses in the past are said to have been due largely to the necessity of selling kraft or sulphate pulp at less than cost of production. The new machine capacity means that a larger proportion of the company's pulp is converted into paper within its own organization. The excess pulp is now being marketed without loss.

According to reports from the Riordon Company the Kipawa and Hawkesbury mills are operating to capacity. It is stated that the company have disposed of more than half the lumber cut already, and altogether conditions are very much improved over those of a year ago. There is no sign of a decline in the strong demand for bleached sulphite pulp which is the company's Canadian product. It is stated that it will be several weeks yet before formal announcement is made concerning the company's plans of reorganization and financing.

Charles F. Mansell, of the Toronto sales staff of the Howard Smith Paper Mills, Limited, has returned from Fort William where he was during the past week attending the annual convention of the Sovereign Great Priory of Canada which will meet in Windsor next year. Mr. Mansell is a veteran Grand Treasurer of the organization of which he has been a member for a considerable period.

John Glanville, of Thessalon, Ont., expects to have his entire winter cut of pulpwood, 7,500 cords, delivered to the mills shortly. This means the distribution of $60,000, or more, over a large territory, as the timber was purchased from settlers, most of who only had small quantities to dispose of. Mr. Glanville has already delivered 5,000 cords to the mills.

E. W. Bowness, of the Empire Engineering Company, Edmonton, Alberta, has returned to that city from a visit to Stewart Lake in Northern British Columbia. Mr. Bowness is consulting engineer for the hydro-electric plant which proposes erecting a large pulp and paper mill in connection with the Isle Pierre rapids in the Prince George territory, his mission in the north being the estimation of water storage for the use of the proposed plant. He was accompanied by Robert Tyhurst, the representative of the pulp company, and Jack Bremner and F. P. Burden. Stewart and Tremblar lakes were visited by the party. Mr. Tyhurst has been interested in Northern British Columbia for the past three years, the company which he represents holding no less than 250 timber berth licenses. If the pulp and paper mill project goes ahead it will mean the establishment of a sixty-thousand horsepower plant and the expenditure of millions of money.

NEW BRUNSWICK NEWS

Despite the fact that pulp and paper interests in conjunction with lumber interests of New Brunswick have been emphatically opposed to increase in rates by the Workmen's Compensation Board, of New Brunswick, an increase has been made. This increase, retroactive from June 29 is $2.00 on pulp and paper mills. On planing and moulding mills the increase is $2.00. On saw mills the increase is $3.00. On logging, booming, river driving there is an increase of $4.00 On artificial limbs the increase is $0.50.

Despite the active campaign of the New Brunswick Lumbermen's Association which is headed by Angus McLean, of Bathurst N. B. and H. E. Beedy of St. John, N. B. two men identified prominently with the pulp and paper trade in New Brunswick, the board has announced the increases as noted. Apparently, there is to be no relief for the pulp and paper industry from the heavy burdens placed on it by the New Brunswick Workmen's Compensation Board. Pulp and paper men are strenuously objecting to the increases. Among those vitally affected by the increases not only in the clause covering the pulp and paper mills but the logging, booming, river drivin,g etc., totalling an increase of $6.00 are; Fraser Companies Limited,; Nashwaak Pulp and Paper Company; St. George Pulp and Paper Company; Bathurst Company; Hollingsworth and Whitney who are building a paper mill at St. Stephen will also be affected. International Paper Company which is expected to build a paper mill at Grand Falls will likewise be affected.

JAPAN'S PULP & PAPER IMPORTS

Pulp Imports in May in Japan

yen = 50 c. U. S. Currency
kin = 1.33 lbs.

Ports	Mechanical Pulp	Chemical Pulp	Value
Yokohama	. . .	1.746.300 kin	yen 185.100
Kobe	. . .	2.166.300 kin	206.906
Moji	. . .	. . .	. . .
Totals		3.912.600	392.006
			Totals
Jan.-May 1923	225.400 kin	19.138.900 kin	19 364.300
	yen 16.632	yen 1.892.709	yen 1.909.341
Jan.-May 1922	2.824.300 kin	59.095.000 kin	61.919.300 kin
	yen 242 466	yen 6 482.302	yen 6.724.768

Countries imported from in May

England	423.800 kin =	yen 57.000
U. S. A.	511.100	67.882
Sweden	100	8
Germany	84.800	10.447
Norway	346.200	41.122
Canada	2.546.600	215.547
Totals	3.912.600	392.006

ONE CORD OF WOOD PRINTS 96,000 PAGES

In response to an inquiry, "how much wood it takes to make a 24 page newspaper," Mr. W. G. MacNaughton, secretary of the Technical Association of the Pulp and Paper Industry, offers the following:

One ton of newsprint contains roughly 1,500 pounds of mechanical wood pulp which in turn represents 5/6 cord of rough spruce wood, together with 500 pounds of sulphite (chemical wood pulp), representing ½ cord of spruce wood.

One ton of newsprint, therefore, represents 5/6 + ½ = 1 1/3 cords of wood.

The "New York Times" weighs approximately 6 ounces to 24 pages.

1 pound of newsprint = 64 pages New York Times.
2,000 pounds (one ton) = 128,000 pages.
1 1/3 cords wood = 128,000 pages.
1 cord = 96,000 pages = 4,000 copies of 24 page papers as "New York Times."

This is a fairly close approximation and about as near as can be calculated for the average conditions.

Be wise today that you may be whole tomorrow.

Never step over one duty to perform another. Take the nearest first.

UNITED STATES NOTES

Low water conditions caused the mills of the International Paper Company to operate last week at 93 per cent. of what is regarded as normal production. Other Eastern paper mills have been more seriously affected production being curtailed from 10 to 30 per cent. in some cases. Demand for news print continues strong, and there is every indication of a large fall business. The International has large orders to fill and is operating at maximum.

Officials of the American Writing Paper Company have completed plans for a resumption of operations at its mills in Holyoke this week. The plant of the company has been closed since July 18 by a strike of union stationery firemen who walked out for a wage increase. Officials declined to state whether union or non-union firemen would be employed.

In a statement reviewing preliminary statistics of the pulp wood industry, the Department of Commerce announces that consumption of pulp wood in the United States during 1922 was 21.8 per cent. greater than in 1921, but 9.2 per cent less than in 1920, the year of the largest consumption on record. The total consumption of pulp wood last year, as reported by 241 mills, was 5,548,842 cords, compared with 4,557,179 cords consumed by 254 mills in 1921. More than 54 per cent. of the wood used for pulp last year was spruce, 16.1 per cent. was hemlock and 6.7 per cent. was yellow pine. The production of wood pulp was 3,521,644 short tons in 1922, compared with 2,875,601 tons in 1921. Of the total amount in 1922, 1,483,787, tons were produced by the mechanical process, 1,374,319 tons by the sulphite process, 419,857 by the soda process, and 243,681 tons by the sulphate process. Maine, Wisconsin and New York are the leading States in this industry. In 1922 these three States reported 56.8 per cent of the total consumption of pulp wood and 59.7 per cent of the total production of wood pulp.

A damaging fire broke out last Friday in the Santa Barbara forest, California, and swept rapidly over a ten-mile front, destroying much timber as well as dense masses of underbrush. Mount McKinley and Santa Cruz Mountain have been converted into blackened peaks. The flames have swept down Grape Creek to the Santa Cruz Creek Fork and a widened area of the Matzana Forest Reserve has been burned over.

The New York State College of Forestry, Syracuse University, sees in the proposed pulp wood embargo an argument in favor of the adoption of early reforestation measures in the United States. According to the forestry school's latest bulletin, most of the pulp and paper mills in the United States would be compelled to locate in Canada or shut down if an embargo on pulp wood should be enforced. More forests are sorely needed in the United States, the college says, and the sooner a start is made in the planting of trees on an adequate scale the sooner will this threat to one of the nation's big business interests disappear. (Editorial note: It is untrue that **most** of the United States mills would even be affected. Only one fifth of the total wood supply is involved at all.)

In a report to stockholders, S. L. Willson, President of the American Writing Paper Company, declares that with the addition of further working capital the company's future success can be assured. "In April," Mr. Willson says, "a complete change in the company's management took place. The present organization is one composed of men of executive ability, long experience and practical knowledge of paper manufacturing and merchandising, and never in the history of the company have its affairs been in more competent hands. The savings alone to be effected under the plans of present management will be large." The balance sheet of the company as of April 30 last follows: Cash $528,820, against $1,206,754 on December 30, 1922; inventories, $4,207,863, against $4,557,754; surplus, $3,618,417, against $5,286,402. Total assets-liabilities, $39 629,191, compared with $40,414,560 on December 30, 1922.

One of the tangible results of the recent visit to Alaska of the late President Harding which otherwise plunged the nation into grief and mourning, is that the Forest Service is out to develop there a permanent industry—as permanent as the vast paper industry of Norway and Sweden. The Forest Service is trying its level best to exploit the paper industry and encourage the use of its timber generally. It has spent $60,000 in the survey of power sites and the location and appraisal of the best areas for the sale of pulpwood. The Forest Service regards the development of this industry as one of its prime functions. In the Tongass National Forest alone fourteen units have been defined for the establishment and perpetual supply of pulp and paper plants.

Each unit contains feasible water power sites, manufacturing sites, and deep channel transportation—deep waterways which cut everywhere right into the heart of the forest — together with sufficient timber to provide not less than forty-five years' supply for a paper mill with a capacity of a hundred to two hundred tons daily. What is more, the area of timber-growing land in each of these units is sufficient to produce a perpetual supply of pulpwood for the plant. The Forest Service does not want the forests to be "locked up"; neither will it allow them to be recklessly exploited. It has simply got things fixed so that when market conditions justify the investment a great industry can be developed in Alaska with benefit to the Territory and without that irreparable damage which would have been done to all the natural resources had it not been for Roosevelt and Pinchot and the conservation doctrine which they preached. The forests covering the mountain slopes around Ketchikan are a truly imperial natural resource of the Territory. They cover something over 20,000,000 acres — a ribbon of spruce and hemlock along 15,000 miles of shoreline. Col. Greeley, head of the Service, estimates that there is at least 100,000,000 cords of papermaking wood in these forests which should in time be the base of a great pulp and paper industry.

The talents, ours to-day, may be demanded by the Owner to-morrow.

(Continued from page 825)

K-10 Sizing Paper Stock J. A. DECEW, assignor to Process Engineers, Inc. U.S. pat. 1,444,956, Feb. 13, 1923. — Filling material such as clay in aqueous suspension is treated with a dilute colloidal aqueous solution of a free rosin size and after thorough mixing of the ingredients they are added to paper stock in a beating engine.-A.P.-C.

K-10 Colloid Studies in the Rosin sizing of Paper. RUDOLF LORENZ. **Papierfabr. 21, 221-225** (Apr. 29, 1923); 229-235 (May 6, 1923); 241-248 (May 13, 1923); 253-259 (May 20, 1923); 265-268 (May 27, 1923); 273-276 (June 3, 1923). (A series of articles to be reprinted later in book form.) A brief monograph on rosin is given, with especial reference to its use for paper sizing. The fundamentals of colloid chemistry are covered as far as they relate to the colloid nature of rosin sizing. The concept of L. Paul, that there is a series of abietic acids with different contents in colloidal water, was confirmed. His conclusion, however, that these hydrate combinations can be treated as stochiometrical constants was not found true. The striking change in the physical nature of dispersed rosin owing to slight increases in temperature is the explanation offered for the sizing troubles incident to operating with hot stock in the beater. When abietic acid-acetic acid solution is cooled, a coarsely dispersed separation does not occur at once, but after an hour a typical colloid is obtained. P. P. von Weimarn's rule, that with extreme concentrations a precipitate occurs, in a very finely divided form and with moderate concentrations a coarse precipitate occurs, was observed with abietic acid hydrosol. Also the crystalline nature of the colloid phase, assumed by von Weimarn, was occasionally recognized. The peptizing action of hydroxyl ions on rosin was studied, as well as its colloidal characteristics by means of colloid-chemical methods. Sodium resinate soap in water occurs within the limits of the molecular and the colloid states, and only in very concentrated solutions does it assume the emulsoid state. "Free rosin" is identified as a typical suspension colloid with a negative charge. "Size milk" is a free rosin hydrosol, peptized by the resinate of hydroxyl ions. Surface tension-concentration curves of rosin size solutions of varying alkali content are sketched and described, and their practical use demonstrated. A very exact control of the manufacture of rosin size can be exercised by means of the drop count test. By these tests, the amounts of total and free rosin in size milk can be determined. Under "dynamics of rosin sizing", the author considers the equilibrum changes occurring in the beater during the sizing process. The precipitating actions of a number of salts on the abietic acid hydrosol are tabulated. With increasing charge on the action, there is an increase in flocculation intensity; on the other hand, the anions exert a peptizing action. The effect of impurities in the water on sizing is shown. The positively charged aluminum hydroxide acts as an "electrostatic adhesive" with the negatively charged fibers and rosin, thereby producing an isoelectric state.-J.L.P.

PAPER MACHINES

K-12 Comparison of Drier Felts. Mon Papeterie Française 54, 83-84 (Feb. 15, 1923). Brief outline of the relative merits and demerits of wool, cotton, and asbestos drier felts.-A.P.-C.

K-12 Use of the First Press Felt. STEVE CHAMBERS. **Paper Mill** 47, No. 15, 18 (May 19, 1923). In order to maintain proper production on a high speed machine the first press felt should be both strong and open to allow the water to drain through rapidly. An apparently under-napped felt requires less washing than one having a full nap, for the fine-particles of stock will adhere to the drawn out fibers of the felt, causing pinholes in the sheet and shutting off much of its openness, while the short-napped felt will not do this so readily. Running the felt slack while wetting so as to let it become taut through shrinking is not considered wise. — A.P.-C.

K-12 Paper Making Felts. JEAN REGNIER. **Papier** 26, 65-70, 189-194, 309-318, 437-445 (Jan., Feb., Mar., Apr. 1923). A detailed description of the manufacture of paper making felts, of the characteristic properties of the various kinds of felts (couch, press, drier, special), and of the care which they should be given and of the various causes of wear and deterioration to which they are subjected.-A.P.-C.

K-12 Device for Allowing the use of Last Press Felts Till Completely Worn without Removing from the Paper Machine. A. NACHTEGAEL. Fr. pat. **Papeterie** 45, 343-344 (Apr. 10, 1923). A suitable drier is provided for the felt. It is claimed that this allows of appreciable reduction in the pressure at the presses with consequent increase in the life of the felt, better draining of the water through the felt with consequent increase in the dryness of the sheet entering the driers and decrease in steam consumption at the driers and increase in the life of the drier felts, decrease in loss of time owing to fewer stoppages of the machine, and possibility of increasing the speed of the machine and consequently increased output.-A.P.-C.

K-12 Electric Sectional Drive for Paper Machines. W. STIEL. **Wochbl. Papierfabr.** 54, 609-612 (Mar. 3, 1923); 697-698 (Mar. 10, 1923). The first article is a general discussion of electric motors for paper machine drives. In the second, the advantages of polymotor drive over single motor drive are: greater accessibility, less hazardous, possibility of operation of each individual unit. A brief sketch of the development of polymotor drive is given.-J.L.P.

K-12 Progress in Paper Machine Sectional Drives in America. W. STIEL. **Wochbl. Papierfabr.** 54, 832-833 (Mar. 24, 1923). Data on 30 electric sectional drives employed in U.S. and Canada are tabulated.-J.L.P.

K-14 Methods of Calender Operation. ERNST. BLAU. **Wochbl. Papierfabr.** 54, 903-906 (Mar. 31, 1923). The development of calender operation from a power standpoint is outlined. Especial mention is made of the use of the electric motor.-J.L.P.

COATED PAPERS

K-19 Coating Composition of Paper. H. N. CASE. U.S. pat. 1,445,387, Feb. 13, 1923. — A paper coating mixture is formed of clay 39 lb., water for the clay 28 lb., gelatin 74 oz., water for the gelatin 15 pt., a 10% caustic soda solution 90 cc., and coloring material, e.g., paranitraniline red.-A.P.-C.

K-19 Coated Paper. H. R. RAFSKY. U.S. pat. 1,374,-112, Apr. 5, 1921. — The surface of the paper is coated with a pigment produced by the interaction of sodium carbonate and slaked magnesian lime in an aqueous medium, and an adhesive.-A.P.-C.

K-19 A Fibrous Coating for Paper. JOHANN PALMEN. Ger. pat. 372,870. **Papierfabr. 21, 227** (Apr. 29, 1923). A fibrous coating is applied to paper by sprinkling fibers on paper which has been coated with an adhesive, as dextrine. The sheet is then pressed and dried by passing between head rolls.-J.L.P.

The Markets

CANADIAN TRADE CONDITIONS

Montreal, August 14. — Reports by jobbers and representatives of mills agree that the paper trade has declined somewhat. Those who have hitherto been disinclined to admit a falling off in orders now declare that the volume of trade is lower. A part of this slackness may be attributed to seasonal dullness. There is however no cause for pessimism, for there is certain to be a revival.

Competition both by mills and jobbers is keen. From the mill point of view, Canada is consuming too much paper produced outside the country. The consumer as a rule cares little or nothing as to the country of origin, what he wants to know is whether the qualities and price are right, and the jobber is out to satisfy that demand regardless of where the paper is made.

The trade in cheap toilets may be cited as an example of the competition by mills outside Canada. About three weeks ago a meeting of the tissue and toilet section of the Canadian Pulp and Paper Association was held in Ottawa to consider the situation. The result is a reduction of a cent to a cent and a half per pound in cheap domestic tissues.

Looking at the situation from a broader point what is the immediate outlook for the paper industry? The general commerce of the country is largely influenced by agriculture, the greatest of our basic industries. A poor harvest means less purchasing power for the farmer and therefore a lessened demand for general commodities including paper. Reports from all over the Dominion are to the effect that there is an abundant harvest, although conditions naturally vary in districts. On this ground, we are justified in looking for a good general business in the fall, in which the pulp and paper industry will share. It is an industry which enters into every department of commercial activity, and is affected by the prosperity or depression of those departments. The outlook is hopeful for the balance of the year.

The production of newsprint in Canada and the United States is still at a high level. In June it showed a falling off as compared with the previous month, but this was only in line with precedent. Canada's output was 108,832 tons and that of the United States 133,692 tons. The totals for the six months were ahead of the corresponding period in 1922. Thus Canadian mills turned out 621,897 tons as against 516,506, and the United States 760,636 tons as against 690,142.

In the pulp department, groundwood continues to be the feature. Many inquiries have been received for the comparatively small amount available; prices are firm, with the outlook for an advance. Sulphite is a fair market, there being reports that some lots have been sold at a reduction. The demand for bleached sulphite is quieter, although the stocks on hand are not large and it is probable that these will be absorbed in a short time.

As an instance of the change in the lumber trade, consequent upon the expansion of the pulp and paper industry, it may be mentioned that none of the large producers in the Three Rivers district will cut deals for the English market. All the wood is required for pulpwood. It is not many years ago that these mills supplied large quantities of lumber for overseas.

Ontario Market News

As far as business conditions in pulp and paper circles in Ontario are concerned there is no improvement to record. The sales of paper and paper products are still feeling the effects of the holiday season and although a few lines are moving freely the trade generally is quiet although it is generally believed that the early fall will see a resumption of activity. At the moment, however, it must be said that the summer slump has not only been severe but it has been rather more protracted than was expected. The printing trade in most of the larger centres is only using moderate quantities of paper, although in the smaller places throughout the province the printers appear to be doing a better business than in cities like Toronto and Hamilton. Paper jobbers say that the consumption of paper in Toronto is unusually light and ascribe it to the holiday season. On the other hand paper manufacturers, notably the book mills, are fairly well satisfied with the volume of business passing, the bulk of it coming from the publishing houses. Kraft and wrapping paper mills have some orders ahead but they are not of large volume, while the converting trade, which, up till a few weeks ago was booming, is now complaining of a protracted summer dullness. The paper box industry is not buying as much box board as usual but it is stated that good business is in sight and that the fall will see container lines selling well.

PULP — Manufacturers of the various pulp lines say that although the market has been somewhat flat during the past few weeks there are indications that it is coming back as indicated by both enquiries and slightly increased business. Groundwood has been livening up a little in respect to demand and there is now a pretty good call for it created largely by the water shortage of mills in the United States. Ontario mills on the whole have been favored with good water conditions, the rains coming late and the water running off gradually. This gave the mills a chance to build up fair reserves. Paper mills, however, have not been buying heavy pulpwood stocks and their piles now are light, which means that they are more inclined to come into the market. While the prevailing quotation for groundwood is around $38.00 the pulp can be bought at a slightly lower figure. The general quotation on unbleached pulp is $65.00 but in some cases it has been hard to get this price on account of foreign competition. The market for regular grades of bleached sulphite is still around $85.00 and $90.00 with news grade at about $60.00.

NEWSPRINT —Newsprint mills are all busy and running to capacity and despite a slightly lessened consumption owing to seasonal conditions shipments to the publishers throughout the province show comparatively little slackening off. That the Fall will see an increased consumption of paper, surpassing that of the new record set up for the first six months of the present year, is the prevailing opinion in newsprint circles. Whether or not there will be an increase in the price next year remains a moot point but in the meantime prices are holding firm.

TISSUE CHANGES — Some slight reductions in the lower grades of tissue papers were announced by the manufacturers last week. There are no changes in the prices of toilets but some slight alterations have been made in the methods of quantity shipments. The new prices on tissues are as follows: natural sulphite cap or No. 1 manila, 24 x 36, $1.30; 20 x 30, 90c.; Regular cap, 24 x 36, $1.10; 20 x 38, 80c.; manila tissue, 24 x 36, $1.00; 20 x 30, 80c.

NEW YORK MARKETS

New York, August 11 – (Special Correspondence) — Most reports have told of a quickening of buying interest in paper this week. Inquiry from consuming quarters has increased perceptibly, and while actual demand has undergone but slight broadening, there seems to be a livelier market developing, and manufacturers and jobbers are getting their affairs in shape for bigger business which they expect.

Prices of paper in quite a few instances show an advancing tendency. No definite changes in an upward direction have yet been recorded, but with raw material rising at a rapid clip and with consuming inquiry for most kinds of paper on the increase, quotations display a hardening tone, and it would not be at all surprising to witness some fairly sharp upward revisions in the near future if demand from paper users develops in the volume that it at present gives promise of. There is no question but that manufacturing costs are advancing. Prices of nearly all descriptions of papermaking raw material are moving up, and labor is growing costlier all the time. The paper industry of course feels the great scarcity of common labor as well as other manufacturing industries, and it is necessary that paper mills pay high wages to unskilled workmen to get them and keep them. Moreover, advances in wages of skilled paper mill operatives have recently been put into effect which will in due time have influence on prices of finished paper.

It is hoped that the strike of stationery engineers in the fine paper mills in and around Holyoke, Mass., will be brought to an end next Monday. At any rate, the mill proprietors have announced that they will attempt to resume operatives of their plants Monday after a shutdown of close to a month; whether or not they will put on non-union firemen is not known, but it is expected that the trouble will be smoothed over somehow and the mills will resume work. The fine paper market is showing signs of increased activity. Consumers are placing orders in a consistent manner though mainly for small quantities of paper, and prices are firm. The curtailed production because of the shutdown of Holyoke mills has not disturbed quotations since manufacturers have been filling their commitments from stock, but it is presumed that mill stocks have been materially reduced which should make for a period of fairly large production during the next few weeks.

Newsprint continues in a strong market position. Prices are firm and the movement toward publishers shows no let-down. The Newsprint Service Bureau reports production in June in the United States at 133,692 net tons, 65 mills reporting, compared with an output of 138,868 net tons in May with 74 mills reporting, while mill stocks during June increased but slightly from 18,133 net tons at the beginning of that month to 19,514 net tons at the end of June.

Wrapping paper is in good demand but the great bulk of demand is being filled with imported kraft paper. Importers in New York are bringing in large amounts of wrapping from Germany and the Scandinavian countries, and they are marketing this paper at prices at least far enough under those prevailing on the domestic product to enable them to dispose of the supply imported. Domestic mills are securing fairly good business from converters, but are provided with a very narrow market among retailers because of the foreign product.

Buying interest in book papers is good, and demand is gradually though slowing expanding. Book mills in a majority of cases are well fixed with orders. Those that sell the bulk of their production on contract are running along at an even clip and are shipping paper regularly in comparatively large tonnage, while those depending on the transient trade are kept moderately busy. Prices have steadied following the recent marking down of quotations, and yet signs are not lacking that in some instances manufacturers are shading asking prices to land orders.

The price movement in box boards is upward. Sharp advancement in raw material has necessitated manufacturers raising quotations a little, and this has stimulated demand, so that mills are securing more business and at higher prices. Plain chip board is quoted at a minimum of $60 a ton f.o.b. New York, and a good many mills are asking $62.50 and $65. News board is quoted at from $65 a ton upward New York.

GROUNDWOOD — The market for mechanical pulp is growing stronger day by day. Demand is on the increase, and what is still more of a bullish factor, production is low owing to poor water conditions in grinding districts which prevent manufacturers from grinding at a normal rate. Producers, in fact, are very cautious about entering selling engagements. Most of them are conserving pulp on hand against commitments, and are selling only such surplus as they are fully aware they will not need themselves or do not owe on back orders, and the consequence is that consumers are experiencing considerable difficulty in locating all the supply desired and are paying higher prices. Canadian ground wood has been reported sold at $45 a ton f.o.b. grinding plants in some cases, and it is said that the lowest which grinders across the border will consider is $40 at shipping points. Domestic producers quote between $36 and $40 a ton at pulp mills, the lower prices being due to greater moisture in domestic groundwood than in Canadian pulp and the resultant higher freight on the former. Dealers are bullish and are predicting groundwood will go to $50 a ton before the end of August. Consumers in the Wisconsin district are reported especially bare of supplies, and a great part of the present movement is in that direction.

CHEMICAL PULP Probably the most important development in chemical pulp is that Norwegian manufacturers and shippers have withdrawn all quotations and have advised importers in New York that there is every likelihood of a strike in the pulp and paper industry of that country becoming effective on August 23 . The pulp and paper mill employes in Norway are demanding an advance in wages in the new year's agreement with manufacturers which is due to become effective August 15. The mill owners are understood to be unwilling to grant the increase asked, and the workers' union has served notice that unless the agreement to cover the forthcoming year is arranged and the advance granted in the meantime they will go on strike August 23. Should the strike take place it would likely result in available supplies of pulp in Norway being greatly reduced, which would undoubtedly make for a rise in pulp prices.

About the only change of consequence in the market here this week has been a little easing of prices on kraft pulp. Importers who up to a few days ago were reported holding firmly for at least 3.35 cents a pound ex dock New York for Swedish kraft are now said to be showing willingness to sell at 3.25 cents, while it is authoritatively said that a 5,000-ton lot of foreign kraft pulp of other than Swedish origin was sold to a Middle West board mill at 3 cents a pound on the dock New York, this pulp of course being for forward shipment from abroad. Unbleached sulphite is quotably firm, and nothing new has developed in bleached sulphite. News of the threatened strike in Norway should serve to stiffen up prices on bleached sulphite, since most of the pulp imported into the U. S. from that country is of this character.

RAGS — The market for papermaking rags is firm. With low grades moving freely to felt paper mills and at higher prices, other grades show an advancing trend, and dealers, who claim to have but small stocks to dispose of, are constantly marking up quotations to mills and are not hesitating to refuse business at other than the full quoted figures.

PAPER STOCK — A strong tone continues to characterize old paper prices, and additional advances have been recorded in a number of grades this week. Demand from mills is fair; it is apparent that board manufacturers and other consumers are mainly buying to cover actual and immediate needs, yet orders are of ample tonnage to sustain prices and to encourage sellers to ask higher figures. Probably the strongest grade of waste paper is old folded newspapers. Indications are that board mills have loaded themselves up with orders for news board and they are actively on the lookout for supplies of old newspapers against these commitments. Flat folded news has sold at 1.30 cents a pound f.o.b. New York, and there are now a good many dealers who will not accept orders at this price basis, asking a dollar or two per ton more. No. 1 mixed paper is bringing 95 cents to $1 a hundred pounds New York, and city or common mixed paper 70 to 75 cents. Old magazines are in steady call and strong in price. About the lowest New York shippers will entertain is 2 cents a pound f.o.b. this city, and most of them will not sell at less than 2.15 to 2.25 cents for heavy No. 1 magazines. Savings are firm at between 4.25 and 4.50 cents per pound for No. 1 hard white, and 3.35 and 3.50 cents for No. 1 soft white shavings. Old kraft paper is firm at around 2.35 cents per pound New York, and ledgers and writings are quoted at 2.15 cents upward.

OLD ROPE AND BAGGING — Old manila rope is still largely neglected by paper mills. Occasional orders are coming into the market but they chiefly call for single carlots, and prices range about 5.50 cents a pound at shipping points for No. 1 domestic manila rope, with some supply probably available down to 5.25 cents.

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VOL. XXI. GARDENVALE, QUE., August 23rd, 1923 No. 33

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Official Journal of the Technical Section of the Canadian Pulp and Paper Association.

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The editor cordially invites readers to submit articles of practical interest which, on publication, will be paid for.

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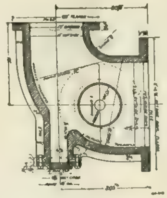

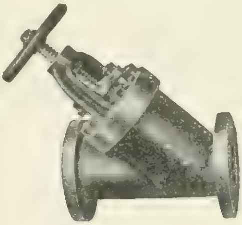

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EDITORIAL

THE PULPWOOD COMMISSION

A royal commission has been appointed to investigate the situation in Canada with regard to supply of pulpwood and the need for further restrictions on its export in the unmanufactured state. On the Commission, the appointments to which are given on another page, we find a manufacturer, two lawyers, a lumberman and a contractor; the secretary is an official of the Federal Government, Acting Director of the Forestry Branch. Except for the secretary, none of the appointees are known to the Pulp & Paper Magazine, due no doubt to our limited acquaintance of only seven years with the industry. Perhaps the Government wants men entirely outside the industry in order to get perfectly unbiased opinions. But why go so far afield for men who may have no great concern for or interest in forest conservation, and who are probably unfamiliar with forestry growth statistics and the need of wood using industries, when there are in federal and provincial service, men who know the situation already as far as data are available. In their hands the order to the commission to get information would result in the up-to-date inventory of our forest resources that has long been sadly lacking, and they would get it quickly, with a minimum of expense.

Why spend $5,000 a month for getting information the Government should have, or should get from its own services, whose staffs could easily and properly be increased to do the work quickly and comprehensively. The commissioners are allowed $25 (chairman, $35) with $15 for expenses, per day, in addition to railway fare. Now $12,000 to $15,000 a year is a very comfortable income. We hope the secretary of the commission gets a return commensurate with his services which we imagine will be the bulk of the work done.

Is there any politics involved in the appointment? Are the commissioners all disinterested or uninterestible in what concerns exporters of pulpwood? Who knows? Are the commissioners the best men available for this important work? We think not. But they may take hold of the work conscientiously and energetically and make a good job of it. And they may become enthusiastic advocates of forest conservation.

In our humble opinion, the organization of this business is wrong. The men on the Commission cannot possibly do the work entrusted to them; they lack experience, and they have not the necessary funds available for getting it done. Even in the hands of forest engineers, it would take three years to get the accurate inventory that should result from an investigation dignified by the appointment of a Royal Commission to carry it out, and the Commission would have been big enough had there been but a chairman versed in forest technology, with a statistical secretary and an appropriation for aerial and ground surveys and mapping.

We fear the Government has lost a chance to do something really worth while for Canada; a forest inventory has been a crying need for years. The Commission was appointed ostensibly in the interests of Canada's wood using industries. The most important of them all is the Pulp and Paper Industry, but, as far as we can find out, the Association which represents this industry was not consulted as to appointments to the Commission nor to the work to be done and the general method of doing it.

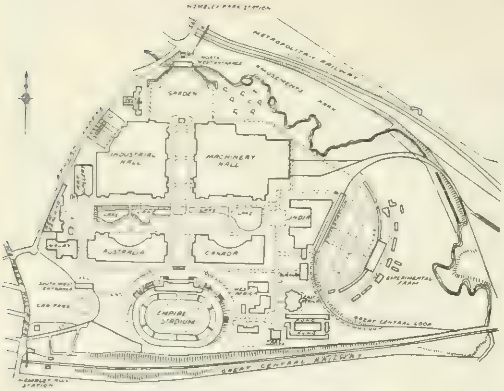
One thing is sure, an accurate inventory of our wood supply will justify the expense, even if it costs $100,000. Let the Commission get to work and here's to their success.

THEY MISSED THE BUS

Glowing reports are received in Canada of the success of the Canadian Exhibition train which is at present touring France. A number of concerns connected with the pulp and paper industry who have their goods on exhibit in the train have already received a number of inquiries which may lead to future business in spite of the fact that France is about as near a closed shop in the way of papers as could be imagined. As one report recently stated, the Canadian train would have been an even greater success had it not been for the fact that several hundred exhibitors ''missed the Bus,'' and even at the last minute, there were a number of firms accommodated in a hurry, who might have been represented by well thought out and well prepared exhibits had they given the matter thought in sufficient time.

Great as was the opportunity for Canadian firms to show their goods by participating in the Exhibition train in France, the British Empire Exhibition is an event of even greater importance, which should be participated in, not only on the basis of possible trade, but perhaps even more so in the case of pulp and paper on the basis of pride in the Dominion and pride in our industry.

The Canadian Exhibition Commission, under the able directorship of Mr. J. S. McKinnon, has charge of the



General Plan of Exhibition Grounds

industrial exhibit, and has been as generous as possible in the allotment of space to the Canadian Pulp and Paper Industry. Even so, there is probably not as much space available as will be in demand for the showing of Canadian products. It would not be surprising if three or four companies would ask for at least a tenth of the total space available. Don't miss the Bus!

The Canadian Pulp and Paper Association executive have shown their interest and confidence in the value of this Exhibition by engaging and underwriting the rental of all the space which the Commission could release for the pulp and paper exhibit. They have appointed a director for the exhibit whose time is given, free of charge, but whose expenses and the expenses connected with the assembling of the exhibit and necessary attendance at the booth will be apportioned among those who avail themselves of this unparalleled opportunity for showing Canadian-made pulp, paper and fiber goods in this great window display of the Empire.

The space and the opportunity are by no means restricted to members of the Association, nor even to manufacturers of paper. Any concern making or converting pulp or paper into a commercial article in Canada is invited to participate in the exhibit. A number of inquiries of this character have already been received.

If you are proud of your product, you can show your faith in it by taking part in this British Empire Exhibition. Further particulars will be furnished by the Director of Pulp and Paper Exhibits, Gardenvale, Quebec.

Don't miss the Bus!

Got your coal? Then get it!

The man with a definite object in view has got it all over the man who has none.

FORD COAL CONVERSION PLANT

It is announced that Henry Ford will soon have in operation, at Ford, Ontario, a plant which will demonstrate a new process for the utilization of coal whereby there will be available a supply of gasoline for operating Ford and other motor cars. The idea is to distil the coal at a low temperature whereby the quantity and value of the by-products are increased. It is stated that the quantity of motor fuel is increased from 4½ gallons per ton of coal by the ordinary high temperature process of distillation to 12 gallons and that the product is a true gasoline, when the unsaturated hydrocarbons are converted into the petroleum type. It is cheering to hear that the cost of gasoline, by this process, will be reduced.

It is stated that the economically recoverable products of the distillation are as follows: coke, coal gas (4,000 cubic feet per ton of coal) sulphate of ammonia, creosote, gasoline and kerosene, and lubricating oils and greases.

The operation of this plant will be watched with interest by pulp and paper mills; first because it is proposed to crush the friable coke and form it into briquettes, using evaporated waste sulphite liquor as a binder, and second, because the initial plant will handle 400 tons of coal daily, and this quantity is exceeded by a number of Canadian pulp and paper plants.

There are a number of interesting possibilities which the Ford experiments will suggest to pulp and paper men: it may result in a profitable market for the disposal of waste sulphite liquors, and it may help materially to solve the domestic fuel problem of some Canadian localities.

AUSTRALIA MAKING PAPER

Reports reaching here from Australia state that the Australasian Paper and Pulp Co., Ltd., of Geelong, Vic., has recently turned out some excellent paper made from pulp consisting of 65 per cent of the products of New South Wales black-butt, 25 per cent imported pulp, and 10 per cent waste paper. On this paper was printed the annual report of the New South Wales Forestry Commission. The report states that at the Forest Products Laboratory in Perth, W. A. it has been found that black-butt, mountain gum, spotted gum, and coast ash all make good and strong papers, that from black-butt being the best. It yields 75 per cent more pulp per digester than the commonest foreign pulpwood. Exceptionally strong light-weight paper, which is suitable for writing, envelope, typing, book, magazine, and similar higher grade printings, can be made from black-butt. The Commission recommends that semi-commercial scale tests be made to produce pulp in ton lots for conversion into paper on full-sized paper machines, and adds that the above facts are interesting, in view of enquiries recently made in Sydney by a British-Swedish group on the question of erecting mills for the manufacture of paper from Australian wood pulp.

Training Technical Men For The Paper Industry

By C. E. LIBBY
Professor of Pulp and Paper Manufacture, The New York State College of Forestry, Syracuse, N. Y.

A few years ago a committee representing one of the Organizations of the American Paper and Pulp Association made a survey of the paper industry in order to determine its requirements for technically trained men. After a careful study of the situation it was the opinion of this committee that the paper and allied industries could profitably assimilate between fifteen hundred and two thousand college trained men each year.

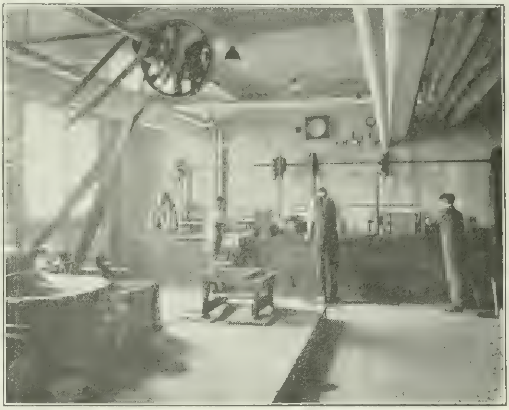
Notwithstanding the apparent opportunities in this field for technical men, American Universities have been slow to introduce into their curricula the specialized courses necessary for training men specifically for this industry. The failure to establish such courses in the past has very probably been due to the reluctance of the colleges to depart from curricula designed to educate broadly, enabling graduates to choose a vocation in almost any field of activity. The demand of the industries for specialists has gradually brought about a modification of this idea and many institutions of collegiate grade are now training men for individual industries. The paper industry has been one of the last to profit by this educational development for it was not until 1913 that any American University offered organized instruction in this field. Even at the present time there are but two well established courses in the United States and Canada although plans for others are being formulated.

Instruction in paper making was first given at the New York State College of Forestry in 1918. The course was organized to give regularly enrolled Forestry students elementary instruction in the important field of forest utilization embraced by the paper industry. Opportunities for employment in this industry were so numerous that many students, educated primarily as Foresters, were soon filling permanent positions in pulp or paper mills despite the fact that their training had not been designed to fit them for this work. To meet this situation, in the fall of 1920 the pulp and paper courses of the college were reorganized with the object of training interested students specifically for the pulp and paper industry.

The New York State College of Forestry is possessed of an ideal location for a school of papermaking. Not only is New York State the leading state in the number of its pulp and paper establishments, but also in the number of people engaged in the industry and in the production and value of its manufactured products. These factors assure the college of active co-operation on the part of the industry in furnishing to its students opportunities for plant experience and in placing its graduates. Within a radius of thirty-five miles of the college are located more than a score of pulp and paper mills while the Black River district, famous for its pulp and paper establishments, is easily accessible. These mills offer exceptional opportunities to students for trips of inspection and plant operating experience. The convenience of its location makes it possible to develop a keen professional spirit among the students of the college since prominent men in the industry frequently visit it, acting as special lecturers on particular phases of the work, and since students may readily attend the conventions of the industry in New York City or elsewhere in the State at small expense.

Laboratories and Equipment

The New York State College of Forestry as its name implies is a state institution, its building having been erected in 1917 on the campus of Syracuse University, at a cost of $250,000. This plant represents the largest and best equipped forestry school in America. The pulp and paper laboratories are located in the basement of the building and occupy approximately 5,000 square feet of floor space. These laboratories consist of a general chemical laboratory, semi-commercial pulp and paper laboratory, paper testing laboratory, color laboratory, and research laboratory. A desirable feature of the organization of the college is its arrangement with Syracuse University whereby all elementary courses such as general chemistry, qualitative and quantitative analysis, etc. are given in the laboratories of the University. This arrangement enables the college to devote its own laboratories exclusively to the specialized work of its departments, giving instruction only to advanced and graduate students. The pulp and paper laboratories of the college are well equipped with approved testing devices and semi-commercial equipment. The experimental pulp mill includes a Mitscherlich sulphite digester, a rotary soda and sulphate digester, diaphram screen, stock vats, and a rotary steam dryer. The semi-commercial paper mill includes a 15 pound Jones beater equipped with a drum washer, a Noble and Wood Jordan engine, Gould centrifugal pump, Rice Barton and Fales wet machine, Harmon diaphragm screen, sheet machine and hand moulds. The paper testing laboratory has a complete equipment of the Schopper physical testing instruments, together with the common

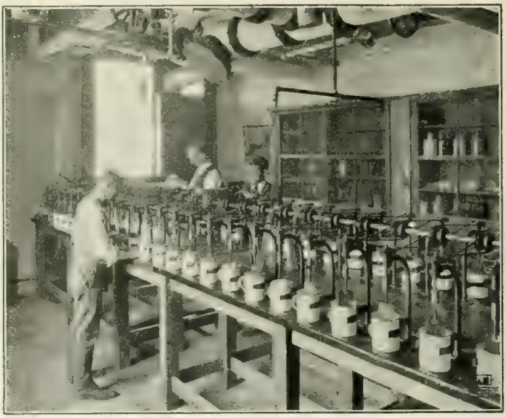


EXPERIMENTAL PULP MILL

This Equipment Reduces Wood to Pulp by any one of the Chemical Pulp Processes

GENERAL CHEMICAL LABORATORY

Devoted to a Study of the Chemistry of Forest Products, Cellulose, and Pulp and Paper Making Processes



COLOR LABORATORY

The Technique of Selecting Dyes for Coloring Paper is acquired by Students in this Laboratory

domestic physical and chemical apparatus for measuring physical strengths, determining fibre compositions and making chemical analyses. The color laboratory is equipped for determining dyestuff strengths, matching shades, or preparing formulas for colored specialties. Several of the large dyestuff manufacturers assisted in organizing the work of this laboratory by presenting to the college complete samples of their dyestuffs that are used in coloring paper.

Library Facilities

The Library of the college contains approximately 5,000 volumes and 10,000 pamphlets dealing exclusively with the various phases of forestry and among which may be found most publications pertaining to the pulp and paper industry. The Syracuse University library contains 135,000 volumes and 65,000 pamphlets comprising collections of books on the sciences, history, economics, languages and engineering. In the Syracuse Public Library there are 165,000 volumes, and many additional thousands of pamphlets and current periodicals. These combined library resources are at the disposal of pulp and paper students thereby affording excellent reference facilities and a proper background for research.

Plan and Scope of the Curriculum

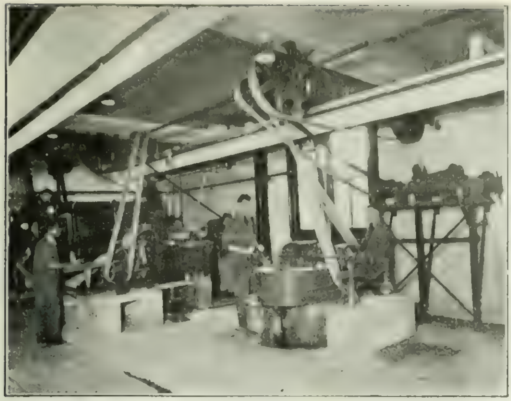
The development of a pulp and paper curriculum at a school of forestry represents a departure in technical education in this country. Heretofore all courses of this nature have been developed in connection with the departments of chemical engineering colleges. There appears to be no reason, however, why a course should not be based upon the curriculum of a professional forestry course especially if the forestry school is so located that the necessary accessory courses in chemistry and engineering can be obtained readily. In many ways the forestry curriculum provides the most logical foundation for this course.

For many years the principal raw material for paper manufacture in this country has been obtained from the forests. More than 75 per cent of the total production of paper in the United States at the present time consists of wood pulp papers, or papers which contain this material as the predominating fiber constituent. Since the production of paper in the United States is approximately 7,000,000 tons annually, there is an enormous drain on our forests to supply the necessary raw material. The present rate of consumption of certain kinds of timber like spruce is so great that they will almost disappear as commercial species within the next twenty-five years. This situation does not mean that wood pulp will soon disappear as a raw material for papermaking, but rather that forest species more difficult to utilize and now considered unfit for pulping will gradually come into use. Fractions of the industry will probably be able to continue with their present raw materials if they adopt scientific measures in reproducing and utilizing their forests.

Since wood pulp is likely to remain a raw material of major importance in the manufacture of paper, it is desirable that the education of a technical man for this industry should include a general knowledge of conservation and forest economics, and a fundamental technical knowledge of the principal raw materials of the industry. A man with this training, coupled with experience in the technical processes of the industry, should have a clearer vision in meeting future readjustments of processes and materials used in papermaking than the man who possesses only a knowledge of the processes themselves.

The pulp and paper curriculum of the College of Forestry is projected with this idea of giving the student a fundamental knowledge of the economic aspects and technical features of his raw materials. Experience indicates that in order to accomplish this not less than 20 per cent of the work of the course must be devoted to a study of elementary forestry, botany, wood technology, cellulose and fiber chemistry.

While the manufacture of pulp and paper cannot be considered a chemical industry, so many of the operations involve chemical processes that the training of a paper technologist would be incomplete without a thorough knowledge of this science. Approximately 20 per cent of the work of the pulp and paper curriculum consists of courses in pure chemistry while fully 50 per



SEMI-COMMERCIAL PAPER LABORATORY

Training Students of the Four Year Pulp and Paper Course to Operate a Modern Paper Mill

PAPER TESTING LABORATORY

Revealing the Physical, Chemical, and Microscopical Properties of Paper

cent of the 29 credit hours devoted to pulp and paper manufacture consist of technological chemistry applied to the specific processes of the paper industry.

The engineering problems associated with the manufacture of pulp and paper are perhaps more varied and extensive than those of the average big industry. A technical man in the mill should have a good elementary knowledge of electrical and mechanical engineering especially with relation to power plant problems. This work is presented in the college curriculum during the Senior Year. Preparatory courses in mathematics, physics and mechanical drawing precede the courses in electrical and mechanical engineering. Altogether these courses account for another 20 per cent of the total work of the four year program.

Society has a right to expect of the college man a certain degree of culture, no matter how technical may have been his education. His value to the community depends not only upon his technical ability, but upon his understanding of human relationships, the exercise of his rights and duties as a citizen, and an appreciation of the arts. It is hardly possible for a professional curriculum to develop such phases of education to maturity, but it should stimulate an interest in them. Courses in English and foreign languages, public speaking, elementary and advanced economics, and business law attempt to develop this interest in the work of the pulp and paper curriculum. These courses comprise 15 per cent of the total work of the program.

Pulp and Paper Courses

Specialization in pulp and paper technology is not attempted during the first two years of the pulp and paper course since this work requires as a pre-requisite the courses in mathematics, physics and chemistry as well as the elementary work in forestry, botany and wood technology. At the beginning of the Junior year the student is given intensive instruction in papermaking. Approximately 20 per cent of the total work of the course is devoted to this subject. The work is divided into ten distinct courses, an abbreviated description of each course being presented herewith:

I. Technology — 108 hours lecture work on raw ma-

SYNOPSIS OF COURSES: PULP AND PAPER CURRICULUM

FRESHMAN YEAR

First Semester		Second Semester	
Elementary Forestry	2 hrs	Forest Zoology I	3 hrs.
English I	3 "	English I	3 "
Forest Botany I	3 "	Forest Botany II	4 "
German I or VI	3 "	German I or VI	3 "
Chemistry I	3 "	Chemistry I	3 "
Math. I, Trigonometry	3 "		
	17 hrs.		16 hrs.

SOPHOMORE YEAR

Wood Technology I	5 hrs	Wood Technology I	3 hrs.
Physics I	4 "	Physics I	4 "
Chem. III, Qualitative	3 "	Chem. III, Qualitative	3 "
Mechanical Drawing IV	2 "	Mech. Drawing V	2 "
Math. II, Algebra	3 "	Math. III, Analytics	3 "
		English II	3 "
	17 hrs.		18 hrs.

Three Months Work in a Pulp or Paper Mill Junior Year

Rhetoric XV, Public Speaking	3 hrs	Economics I	3 hrs
Forest Chem. II, Organic	3 "	Forest Chem. II, Organic	3 "
Chem. 104, Quantitative	3 "	Chemical 104 Quantitative	3 "
Pulp & Paper Mfg. I, Technology	3	Pulp & Paper Mfg. I, Technology	3 "
Pulp & Paper Mfg. II, Laboratory	2 "	Pulp & Paper Mfg. II, Laboratory	2 "
Pulp & Paper Mfg. III, Machinery	3 "	Pulp & Paper Mfg. III, Machinery	3 "
Pulp & Paper Mfg. IV, Mill Analyses	2	Pulp & Paper Mfg. V, Paper Testing	2 "
	19 hrs.		19 hrs

Three Months Work in a Pulp or Paper Mill Senior Year

Electrical Engineering	5 hrs.	Mech. Engineering	5 hrs.
Wood Technology III	3 "	Paper Making Fibers	3 "
Business Law I	2 "	Business Law I	2 "
Forest Chem. III, Cellulose	3 "	Pulp & Paper Mfg. VIII, Organization	2 "
Economics VII	3	Pulp & Paper Mfg. VII, Coloring	2 "
Pulp & Paper Mfg. VI, Pulp Testing	1 "	Pulp & Paper Mfg. X, Problem	3 "
Pulp & Paper Mfg. IX, Problem	1 "		
	18 hrs.		17 hrs

terials, the pulp making processes, bleaching, beating, sizing, loading and coloring.

II. Technology Laboratory — 216 hours laboratory work devoted to experimental demonstrations of the processes described in Course I.

III. Machinery — 108 hours lecture work on the location and design of pulp and paper mills and on the construction and operation of pulp and paper mill machinery.

IV. Analyses — 108 hours laboratory work devoted to the preparation and analysis of chemical solutions to be used in the experimental pulp and paper mill described in Course II, and to the analysis of recovered chemical products resulting from the operation of this mill.

V. Paper Testing — 108 hours laboratory work devoted to the physical, chemical and microscopical examination of papers and filler mixtures.

VI. Pulp Testing — 54 hours laboratory work devoted to the testing of pulps for freeness, color, strength, bleach consumption, overbleaching, etc.

VII. Coloring —108 hours laboratory work devoted to the identification and strength testing of dyestuffs, the shade matching of colors on paper stocks, and the preparation and application of mottling fibers, color lakes, etc.

VIII. Mill Organization — 36 hours lecture work on type organizations, administration, cost systems, mill records, job analyses, accident prevention, factory hygiene and the merchandising of papers.

IX. Problem — 54 hours library work reviewing all available literature on some problem of interest to the pulp and paper industry, and in the preparation of a report on this investigation outlining laboratory work to be undertaken on some phase of the problem.

X. Problem — 162 hours laboratory work devoted to experimental work on the problem studied in Course IX, and in the preparation of a report on the results of this original investigation.

Summer Employment

Each student at the College of Forestry who majors in the work of the pulp and paper course is required to spend at least six months in a pulp or paper mill as a prerequisite for graduation. The time of employment is optional with the student but it is usually distributed between the last two summer vacation periods. A comprehensive, carefully written report, describing the experience of the student, must be presented and approved by the college before credit will be allowed for this practical experience requirement.

The college attempts to locate mills for its students where practical experience may be obtained. These mills accept the students as laborers, and they are put to work in any part of the mill where needed and are usually paid the going rate of wages for the class of work they perform. The cordial attitude of the New York State mills as well as those of neighboring states in assisting the college to place its students has been very gratifying. In several instances mills have stated definitely that these summer jobs really acted as probationary terms of employment and that the students could rely on permanent employment after graduation if their temporary services were satisfactory.

Graduate Work

The college offers graduate work in all its departments including that of the pulp and paper division. However, the college will not grant a degree to anyone who does not possess at least a general knowledge of forestry. Graduates of other institutions who have not had instruction in general forestry may be recommended for the degree of Master of Science on the completion of one year of satisfactory residence work providing they have at least one minor credit in forestry. A minor credit consists of six credit hours. Since thirty credit hours constitute the minimum requirement for a Master's degree, the major work of the graduate student may be elected from the work of the department of the college in which he is most interested.

The Hammermill Paper Co. through their Chemical Director, Dr. Bjarne Johnsen, have established at the college a fellowship for the coming year (September 1923-1924) to be known as the "Hammermill Fellowship in Pulp and Paper Manufacturing". The fellowship carries a grant of $1,200. to the recipient, who must be a graduate student at the college, his work leading to the degree of M. S. Mr. Burton L. Kassing, 105 Grove Place, Utica, N. Y., a member of the 1923 graduating class at the college, has been designated by the company and the college as the recipient of this signal honor.

NEWFOUNDLAND PULP AND POWER PROJECT PROGRESSING

Sir Richard Squires, former Premier of Newfoundland, who was in Montreal last week, discussed at some length the Humber Power development which promises to form a very important factor in the industry of the island. This development is being undertaken by the Newfoundland Pulp and Power Company, which, after reorganization, succeeded the Newfoundland Products Company. "The work is proceeding most expeditiously," said Sir Richard. "There are now approximately 2,100 men employed and the progress is quite apparent. The Armstrong-Whitworth Company have brought from England a lot of material and rolling stock, such as dumpcars, which were not available in the island and this is aiding in the progress. The company has also brought out a number of technical men to direct operations.

"This year the work will be largely concentrated on the power end of the project and to changing the railroad so that it will be clear of the waters of the lake. It is hoped that in November, 1924, the work will be well advanced and that within two years the process of manufacturing will be a fact.

"The power development of the plant will amount to 200,000 horse-power or more and a considerable proportion of that will be required for the manufacturing plant which is designed for a production of 400 tons of paper daily."

Sir Richard explained that the financing of the enterprise was by means of £2,000,000 bonds, guaranteed by the Imperial Government, £2,000,000, guaranteed by the Newfoundland Government, while the Armstrong-Whitworth Company had made large cash advances.

The Sir W. S. Armstrong Whitworth Company are represented in Canada by the Charles Walmsley Co. (Canada) Ltd.

REGRETS

The Pulp and Paper Magazine learned with deep regret of the death of Mr. T. E. Royle of Davies & Royle, paper agents of London. This concern is widely known as paper distributers and many will learn with sorrow of Mr. Royle's demise.

STEAM ACCUMULATORS

By M. EMANAUD

(Translated from "La Technique Moderne", xv, 193-197 (April 1, 1923) and 237-241 (April 15, 1923), by A. Papineau Couture

(continued from last issue.)

Case 8 — When, instead of being used for heating buildings, in which case the temperature can be varied within relatively wide limits, the steam is required for physical or chemical processes, such as evaporation, distillation, digesting, etc., the temperature often is of paramount importance, and a difference of a few degrees may make it worthless. In this case the accumulator can be used as a steam **regenerator,** that is, it may be arranged so as to restore to the steam the value which it has lost. This can be done by merely raising the temperature a few degrees, which can be accomplished in various ways:

1) By adding steam at a higher temperature, or, if need be, live steam extracted from a bleeder turbine or even directly from the boiler. For instance, 1 kilo of steam under a pressure of 10 kilos can furnish 561 calories to an accumulator at 100° C., thereby raising the temperature of 110 liter of water from 100° to 105° C.;

2) By heating by means of waste heat (waste gases from muffles or other furnaces, blast furnace gases, etc.);

3) By heating exteriorly by means of flue gases, either before or after their passage through the economizer; if need be a special small furnace can be used for this purpose;

4) By compression: Kammerer's report can be profitably consulted on this subject;

5) By electric heating: this method, which is quick and easy to regulate, can render very great services. Its use resolves itself to a matter of cost.

Some electric steam boilers are in themselves regular accumulators. There are at present two tendencies in the construction of these boilers: on the one hand, Italian and Swiss constructors favor the use of small units in which the production of steam at each instant is equal to the demand; the Revel boiler is a good example of this; on the other hand, there are the very large boilers which have a considerable water capacity, such as the Bergeron-Frédet boiler. The former can be combined with a steam accumulator while the latter constitute in themselves regular accumulators. The one shown diagrammatically in Fig. 12 is part of a battery of three boilers installed at the Frédet paper mill at Brignoud, Isère (France).

It consists of a cylindrical shell 1.50 meters in diameter and 10 meters long; it produces 4,500 kilos of steam per hour at a pressure of 6 kilos (about 80 pounds per square inch), and takes 3,500 kilowatts as three-phase current at 6,500 volts. The current is led in through the three electrodes 1, 2, 3, and the circuit is closed by the water in the boiler, which is heated to boiling by Joule effect. The electrodes are placed in three bells, and the water level in the latter can be varied by means of the valve V. The steam generated in the bells passes out through the pipes a, and is led back into the body of the boiler at b. If the valve V is slightly closed the pressure rises in the bells and lowers the water level in them; the degree of immersion of the electrodes decreases, and the production of steam falls off. The water can be even completely driven out of the bells, thereby uncovering the electrodes and stopping all production of steam.

The steam is drawn from the generator through a separator.

This installation is simple and compact, of immersing them in a large volume of water, and consequently of considerable power consumption. A certain amount of care is required to obtain regular heating and uniform temperature distribution. (A more complete description of this boiler will be found in Paper Trade Journal , lxxiv, No. 3, January 19, 1922.)

Though we have not mentioned it here, this apparatus can of course be used directly as a large unit boiler.

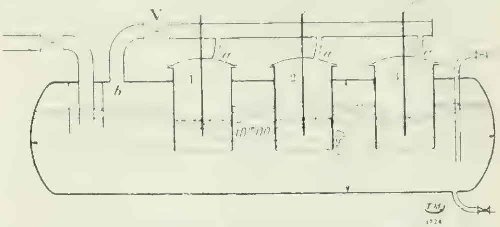


FIG. 12. — Schéma de chaudière à vapeur electrique système Bergeron-Frédet

Fig. 12 — Diagram of the Bergeron-Frédet electric steam boiler

Case 9 — In this case we consider the accumulator combined with a reducing valve as a pressure transformer, allowing of the production of steam under different conditions from its utilization, especially for production at much higher pressures.

It is well known that it is advantageous to use steam at very high pressures: working pressures of 25 kilos (about 325 pounds per square inch) are now commonly used, even in large plants, and boilers and engines have been constructed in Germany for working pressures of 60 atmospheres. But in certain cases it may be advisable to generate the steam at even higher pressures.

On the one hand the latent heat of vaporization of water decreases fairly rapidly with increase in temperature (see Fig. 13). Consequently, as stated by **Rauber** (Report of the Commission on the Utilization of Fuel, Journal Officiel", April 14, 1921) if a given quantity of heat is conducted through the heating surface of the boiler and is used entirely for evaporating the water (which is supposed to have been previously heated to the boiling temperature), the higher the pressure the greater the amount of water which it will evaporate."

On the other hand, ebullition becomes easier as the temperature rises, for the capillary constant of water in the presence of steam decreases and tends towards zero at the critical temperature, which is in the neighborhood of 370° C. We can therefore conclude that unknown forces, generally called **cohesion,** which must be overcome in order to convert water into steam, decrease as the temperature rises.

It is indispensable that ebullition should take place easily in the boiler, and this factor becomes more and more important as the rate of steam production is increased. The main factor which limits the increase in the rate of evaporation is the fear of unduly increasing the temperature of the heating surface, and this temperature depends essentially on the rate at which the heat passes through the metal and is transmitted to the water.

This transmission is effected in three ways: conduction, convection, and ebullition. The heat conductivity of water is negligible in this case. Convection comes into play to a greater extent, but even so the currents have a low velocity and they carry but a small amount of heat, representing the calories absorbed in heating water between two neighboring temperatures, even when the temperature is far from being uniform throughout the boiler. The real cause of the cooling of the heating surface of the boiler is the removal of the heat carried off by the bubbles of steam. When a bubble of steam is formed it absorbs a considerable amount of heat (its latent heat of vaporization); it then rises through the mass of water creating rapid circulation currents and carrying its heat with it. It is therefore the important factor in the absorption of heat from the metal surface.

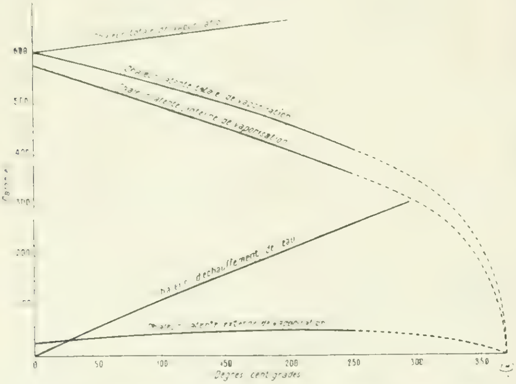


Fig. 13 — Variations des chaleurs de vaporisation de l'eau avec la température.

Fig. 13 Variations in the latent heat of vaporization of water with temperature

Chaleur totale de vaporisation — Total heat of vaporization
Chaleur latente totale de vaporisation — Total latent heat of vaporization
Chaleur latente interne de vaporisation — Internal latent heat of vaporization
Chaleur latente externe de vaporisation — External latent heat of vaporization
Chaleur d'échauffement de l'eau — Heat required to heat the water

In boilers in which the rate of evaporation is very high boiling must be extremely rapid, and it is advantageous that they should work under a very high pressure, first, for the reasons given above, and secondly, because increasing the pressure decreases the volume of the steam and consequently the size of the boiler and other equipment. Nearly all troubles experienced with circulation and with getting proper contact of the water with the heating surfaces is caused by the volume of the steam, and they are lessened by decreasing the steam volume.

Moreover, the danger in case of explosion, which might be feared when the working pressure is increased, decreases with the dimensions of the boiler. So it would seem that in cases where there are important weight and size limitations, more especially in traction engines, it is advisable to use as high a pressure as mechanical limitations will allow, even up to pressures approaching the critical pressure (200 atmospheres), which can now be handled.

But in order to ensure the absolute regularity required in the operation of such a boiler it will be absolutely necessary to combine it with an accumulator working at a lower pressure together with a feed water heater. The size and weight of the installation are evidently increased thereby; but these additions are easier to construct and instal and present less danger.

The furnace of the boiler would also have to be suitably designed. Evidently the flue gases would have to leave the boiler at a very high temperature, and the efficiency would be very low unless means were provided to recover part of their heat. This would ultimately be accomplished by preheating the air for combustion to a high temperature, which would further improve the efficiency, for the value of the calories supplied depends essentially on their thermal potential.

Case 10 — Finally, it may be mentioned that an accumulator can be placed between a machine which exhausts intermittently and its condenser to regulate the delivery of steam to the condensate and make it run more smoothly.

Conclusions

It is evident that some installations could be classified under two or more of the preceding headings, and that some of the latter could be combined together. Combinations of various types could even be considered.

The conditions imposed by the use of accumulators are not numerous: a most important factor is to provide them with a suitable insulation to minimize radiation losses. It should be remarked, however, that losses from this source are not as bad as might appear at first sight, for if the surface is at times very large, the ratio of the surface to the volume is small.

Accumulators make for continuity and regularity of running, and thus contribute to raise efficiency and lower costs.

They can readily be controlled automatically: as the changes taking place inside them are reversible they answer quite readily to automatic control apparatus based on variations of pressure or on other principles. Their operation does not require any attention, and they can easily be operated at a distance.

In a word, in many installations they can render valuable services, and they add a further element of elasticity and flexibility in the use of steam, which in itself is already so remarkable in these respects.

WESTERN CANADA PULP MILL IN BANK DIFFICULTY

It is reported from Toronto that one of the largest losses incurred by the Home Bank was the Western Canada Pulp and Paper Company which was a producer of kraft pulp and paper.

Three of the directors of the defunct bank are stated to be on the board of the paper company which it was hoped could be revived on a paying basis. The property, however, has been closed down for some time having suffered severely of the drop in the kraft market some time ago.

American Pulpwoods

The Suitability of Various Species of American Woods for Pulp and Paper Production

By SIDNEY D. WELLS

(continued from last issue.)

SYCAMORE — *Platanus occidentalis.* Wt. 29 lbs. Fiber 1.7 m.m.

Range — Southeastern New Hampshire and southern Maine to Northern Vermont and Lake Ontario (Don River, near north shores of the lake); west to eastern Nebraska and Kansas and south to northern Florida, central Alabama and Mississippi, and Texas (Brazos river and thence south to Devils river).

Common Names — Sycamore (Vt., N.H., Mass., Conn., R.I., N.Y., N.J., Pa., Del., Va., W.Va., N.C., S.C., Ga., Fla., Ala., Miss., La., Tex., Ky., Ark., Mo., Ill., Ind., Iowa, Kansas, Nebr., Mich., Wis., Ohio, Ont.); Buttonwood (Vt., N.H., R.I., Mass., N.Y., N.J., Pa., Del., S.C., Ala., Miss., La., Tex., Ark., Mo., Ill., Nebr., Mich., Minn., Ohio, Ont.); Buttonball-tree (Mass., R.I., Conn., N.Y., N.J., Pa., Del., Miss., La., Mo., Ill., Iowa, Mich., Nebr., Ohio); Button-ball (R.I., N.Y., Pa., Fla.); Planetree (R.I., Del., S.C., Kans., Nebr., Iowa); Water Beach, (Del.); Platane, (La.); Cotonier (La.); Bois puant (La.); Co-da-ta-cha-wun-nes — "Big stockings" (Indians, N.Y.)

Sulphite Pulp.

Yield — 1,300 lbs.

Character — Easily pulped and bleached; Poor strength.

Possible uses — Similar to aspen.

Soda Pulp.

Yield — 1,300 lbs.

Character — Soft, easily bleached.

Possible uses — Similar to aspen.

OHIO BUCKEYE — *Aesculus glabra.* Wt. 21 lbs. Fiber—

Range — From Pennsylvania (western slopes Allegheny Mountains) to northern Alabama (Tennessee River Valley and Mountains) and west to southern Iowa, central Kansas, and Indian Territory.

Common Names — Ohio buckeye (Miss. Ga., Ark., Mo., Ohio); Buckeye (Pa., Ky., Mo., Ill., Ind., Ohio, Iowa, Kans.); Fetid buckeye (W.Va.); Stinking buckeye (Ala., Ark.); American horse chestnut (Pa.).

Sulphite Pulp.

Yield — 940 lbs.

Character — Easily pulped; Rather difficult to bleach; Silver gray color.

Possible uses — Same as aspen.

Soda Pulp.

Yield — 940 lbs.

Character — Fairly easily pulped; Rather difficult to bleach; Soft, opaque, short fiber.

Possible uses — Same as aspen.

MANGROVE — Rhizophora mangle. Wt. 56 lbs.[7] Fiber

Range — Southern coast of Florida (Mosquito Inlet and Cedar Keys to southern islands); Mississippi delta; Texas coast; eastern and western coasts of Mexico; Lower California; from Central America along northern and eastern coast of South America to the limits of the tropics; Bermudas, Bahamas, West Indies; Galapagos Islands.

Common Name — Mangrove (Fla.)

Sulphite Pulp — Did not test.

Soda Pulp.

Yield — 2,400 lbs.

Character — Readily pulped; Difficult to bleach; Short fiber.

Possible uses — The same as aspen.

BUTTERNUT — *Juglans cinerea.* Wt. 22 lbs Fiber 1.2 m.m.

Range — Southern New Brunswick to Delaware and on the Appalachian Mountains to Georgia and Alabama (head waters of Black Warrior River, Winston County); westward through Ontario to Dakota, southeastern Nebraska, southern Missouri, and northeastern Arkansas.

Common Names — Butternut (Me., N.H., Vt., Mass., R.I., Conn., N.Y., N.J., Pa., Del., W.Va., N.C., S.C., Ala., Ark., Ky., Mo., Ill., Iowa, Ind., Mich., Minn., Wis., Kans., Neb., Ohio, Ont.); White Walnut, (Del., Pa., Va., W.Va., N.C., S.C., Ala., Ky., Mo., Ill., Ind., Wis., Iowa, ...H., S.C.); Butternut (N.J.)

Sulphite Pulp.

Yield — 1,000 lbs.

Character — Easily pulped and bleached; Weak and poor color.

Possible uses — Same as aspen.

Soda Pulp.

Yield — 1,000 lbs.

Character — Easily pulped; Difficult to bleach; Short, opaque fiber.

Possible uses — Same as aspen.

CHESTNUT, ELMS, OAKS, AND OTHER RING POROUS WOODS

CATALPA — *Catalpa catalpa.* Wt. 31 lbs. Fiber ....

Range — Supposed to be indigenous only in southwestern Georgia, western Florida, central Alabama and Mississippi, but widely cultivated and naturalized elsewhere east of the Rocky Mountains.

Common Names — Catalpa (Mass., R.I., Conn., N.Y., N.J., Pa., Del., W.Va., N.Ca., S.Ca., Ala., Ga., Fla., Miss., La., Ark., Ky., Mo.; Ill., Kans., Nebr., Iowa, Mich., Wis., Ohio, Minn.); Indian Bean (Mass., R.I., N.Y., N.J., Pa., N.C., Ill.); Beantree (N.J., Del., Pa., Va., La., Nebr.); Catawba (W.Va., Ala., Fla., Kans.); Cigartree (R.I., N.J., Pa., W.Va., Mo., Ill., Wis., Iowa); Catawba-tree (Del.); Indian Cigar tree (Pa.); Smoking bean (R.I.).

Sulphite Pulp.

Yield — 1,390 lbs.

Character — Fairly easily pulped; Difficult to

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[7] **From comparatively few specimens.**

bleach; Short fiber, specky and pink.
Possible uses — Same as aspen.

Soda Pulp.
Yield — 1,340 lbs.
Character — Easily pulped and bleached; Short opaque fiber.
Possible uses — Same as aspen.

CHESTNUT — *Castanea dentata* — Wt. 25 lbs. Fiber 1.0 m.m.

Range — From southern Maine to northwestern Vermont (Winooski River), southern Ontario, and southern shores of Lake Ontario to southeastern Michigan; southward to Delaware and southeastern Indiana, and on the Allegheny Mountains to central Kentucky and Tennessee, central Alabama, and Mississippi.

Common Names — Chestnut (Me., N.H., Vt., Mass., R.I., Conn., N.Y., N.J., Pa., Del., Va., W.Va., N.C., Ga., Ala., Miss., Ky., Mo., Mich., Ont.); O-her-yah-taf — "Prickly Burr" (Indians, N.Y.).

Sulphite Pulp — (Unextracted wood.)
Yield — 1,100 lbs.
Character — Very difficult to bleach; Dark colored, weak pulp.
Possible uses — None.

Soda Pulp.
Yield (on extracted chips) 950 lbs.
Character — Soft, easy bleaching, a little hard to cook.
Possible uses — Similar to aspen. (Unextracted wood can be pulped but is very difficult to reduce and bleach.)

HACKBERRY — *Celtis occidentalis.* Wt. 30 lbs. Fiber 1.1. m.m.

Range — From St. Lawrence River (St. Helens Islands, near Montreal) to southern Ontario; in the United States from Massachusetts (Massachusetts Bay) to northwestern Nebraska, North Dakota, southern Idaho (Boise City), eastern Washington and Oregon (Snake River), western Washington (Puget Sound), Nevada (East Humboldt Mountains), New Mexico, and south to Florida (Biscayne Bay and Cape Romano), middle Tennessee, Missouri, eastern Kansas, Indian Territory, and eastern Texas.

Common Names — Hackberry (N.H., Vt., R.I., N.Y., N.J., Del., Pa., W.Va., N.C., S.C., Ala., Fla., Miss., La., Tex., Ariz., Ark., Ky., Me., Ill., Ind., Wis., Iowa, Kan., Nebr., Mich., Minn., S. Dak., Ohio, Ont.); Sugarberry (N.Y., Pa., Del., N.C., S.C., Minn.); Nettle-tree (R.I., Mass., Del., Mich.); American Nettle-tree (Tenn.); Hoop Ash (Vt.); One-berry (R.I.); Hack-tree (Minn.); Juniper-tree (N.J.); Bastard elm (N.J.).

Sulphite Pulp.
Yield — 1,300 lbs.
Character — Easily pulped and bleached; Short fiber exceptionally light colored.
Possible uses — Same as aspen.

Soda Pulp.
Yield — 1,200 lbs.
Character — Easily pulped; Rather difficult to bleach; Short fiber not very opaque.
Possible uses — Same as aspen.

SASSAFRAS — *Sassafras sassafras.* Wt. 26 lbs. Fiber .9 m.m.

Range — From eastern Massachusetts through southern Vermont, southern Ontario, and central Michigan, southeastern Iowa, eastern Kansas, and Indian Territory; south to central Florida and Texas (Brazos River).

Common Names — Sassafras (Vt., N.H., Mass., Conn., R.I., N.Y., N.J., Pa., Del., Md., Va., W.Va., N.C., S.C., Ga., Fla., Miss., La., Tex., Ark., Ky., Mo., Ill., Ind., Kans., Neb., Mich., Ohio, Ont.); Saxifrax (Fla.); Saxifrax-tree (Tenn.); Sassafac (W. Va.); Sassafrac (Del.); Gumbo file (La., Negro dialect); Wah-eh-nah-kas — "Smelling stick" (Onondaga Indians, N.Y.)

Sulphite Pulp.
Character — Very difficult to pulp.

Soda Pulp.
Yield — 780 lbs.
Character — Easily pulped; Difficult to bleach; Short, opaque fiber.
Possible uses — Same as aspen.

CORK ELM — *Ulmus racemosa.* Wt. 36 lbs. Fiber 1.32.

Range — From Quebec (eastern townships) through Ontario, and south through northwestern New Hampshire to southern Vermont; westward through northern New York, southern Michigan, and Wisconsin (Lake Mendota, near Madison) to northeastern Nebraska (Meadville, Keyapaha County), southeastern Missouri, and middle Tennessee.

Common Names — Cork elm (Vt., Mass., R.I., N.Y., N.J., Ark., Ky., Mo., Wis., Mich., Ohio, Iowa); Rock elm (R.I., W.Va., Ky., Mo., Ill., Wis., Iowa, Mich., Nebr., Ont.); Hickory elm (Mo., Ill., Ind., Iowa); White elm Ont); Thomas elm (Tenn.); Northern cork-barked elm (Tenn.); Cork-bark elm (N.Y.); Northern cork elm (Vt.); Wahoo (Ohio); Cliff elm (Wis.); Corky white elm.

Sulphite Pulp.
Yield — 1,620 lbs.
Character — More difficult to pulp and bleach than aspen; Poor color and strength.
Possible uses — Few.

Soda Pulp.
Yield — 1,620 lbs.
Character — Easily pulped and bleached; Soft, and short fibered.
Possible uses — Same as aspen.

SLIPPERY ELM — *Ulmus pubescens.* Wt. 30 lbs. Fiber 1.7 m.m.

Range — From Lower St. Lawrence River (Orleans Island) through Ontario to North Dakota and eastern Nebraska; south to western Florida, central Alabama, and Mississippi and Texas (San Antonio River).

Common Names — Slippery elm (Vt., N.H., Mass., R.I., N.Y., N.J., Pa., Del., Va., W.Va., N.C., S.C., Fla., Ala., Ga., Miss., La., Tex., Ky., Mo., Kans., Nebr., Ohio, Ill., Ind., Wis., Mich., Iowa, Minn., Ont.); Red elm (Vt., Mass., N.Y., Del., Pa., W.Va., S.C., Ala., Miss., La., Tex., Ark., Ky., Mo., Ill., Kans., Nebr., Iowa, Ohio, Ont., Wis., Mich., Minn.); Red-wooded elm (Tenn.); Rock elm (Tenn.); Orme gras (La.); Moose elm; Co-hoosk-ah — "It slips" (Indians N.Y.).

Sulphite Pulp.

Yield

Character — Difficult to pulp

Soda Pulp.

Yield — 1,260 lbs.

Character — Easily pulped; Rather difficult to bleach; Short fiber.

Possible uses — Same as aspen.

WHITE ELM — *Ulmus americana.* — Wt. 27 lbs. Fiber 1.6 m.m.

Range — From southern Newfoundland to Lake Superior (north shores) and to the eastern base of the Rocky Mountains (here up the Saskatchewan River to latitude 54° 30″); south to Florida (Cape Canaveral and Pease Creek); west to Dakota (Black Hills), western Nebraska, western Kansas, Indian Territory, and Texas (Rio Concho River.)

Common Names — American elm (Vt., Mass., R.I., N.Y., Del., Pa., N.C., Miss., Tex., Ill., Ohio, Kans., Nebr., Mich., Minn., Ont.); White elm (Me., N.H., Vt., Mass., R.I., N.Y., Pa., N.J., Del., Va., W.Va., N.C., S.C., Ala., Fla., Miss., La., Tex., Aark., Ky., Mo., Ill., Ind., Kans., Nebr., Ohio, Ont., Iowa, Mich., Main., N.D., S.D.); Water elm (Miss., Tex., Ark., Mo., Ill., Iowa, Mich., Ohio, Minn., Nebr.); Elm (Mass., R.I., Conn., N.J., Pa., N.C., S.C., Iowa, Wis.); Orme Maigre (La.); Swamp elm, Rock elm.

Sulphite Pulp.

Not tested.

Soda Pulp.

Yield — 1,080 lbs.

Character — Easily pulped; Fairly easily bleached; Short fiber.

Possible uses — Same as aspen.

WHITE ASH — *Fraximus americana.* Wt. 34 lbs. Fiber 1.2 m.m.

Range — From Nova Scotia and Newfoundland to Florida and westward to Ontario and northern Minnesota, eastern Nebraska, Kansas, Oklahoma and Texas ,Ttrinity River).

Common Names — White ash (Me., N.H., Vt., Mass., R.I., Conn., N.Y., N.J., Del., Pa., Va., W.Va., N.C., S.C., Ga., Fla., Ala., Miss., La., Tex., Ky., Mo., Ill., Ind., Iowa, Kansas, Nebr., Mich., Ohio, Ont., Minn., N. Dak., Wis.); Ash (Ark., Iowa, Wis., Ill., Mo., Minn.); American ash (Iowa); Franc-Frene (Quebec); Cane ash (Ala., Miss., La.).

Sulphite Pulp.

Yield — 1,530 lbs.

Character — Easily pulped; A little hard to bleach; Very weak; Poor color.

Possible uses — Few.

Soda Pulp.

Yield — 1,350 lbs.

Character — Very difficult to reduce and bleach.

Possible uses — Few.

RED OAK — Quercus rubra. Wt. 35 lbs. Fiber 1.5 m.m.

Range — Nova Scotia and southern New Brunswick through Quebec and along the north shores of Lake Huron to near Lake Namekagon; south to middle Tennessee and Virginia, and along the Appalachian Mountains to northern Georgia; west to eastern Nebraska central Kansas.

Common Names — Red oak (Me., Vt., N.H., Mass., R.I., N.Y., N.J., Pa., Del., Va., W.Va., N.C., S.C., Ga., Ark., Mo., Ky., Ill., Ind., Iowa, Nebr., Kansas, Mich., Minn., S. Dak., Ont.); Black oak (Vt., Conn., N.Y., Wis., Iowa, Nebr., S. Dak., Ont.); Spanish oak (Pa., N.C.)

Sulphite Pulp.

Yield — 1,600 lbs.

Character — Easily pulped; Easily bleached; Very weak; Poor color.

Possible uses — Few.

Soda Pulp.

Yield — 1,400 lbs.

Character — Very difficult to pulp and bleach

Possible uses — Few.

WHITE OAK — *Quercus alba.* Wt. 37 lbs. Fiber 1.5 m.m.

Range — From southern Maine to southwestern Quebec and through central and southern Ontario, lower peninsula of Michigan and southern Minnesota to southeastern Nebraska and eastern Kansas; south to northern Florida and Texas (Brazos river.)

Common Names — White oak (Me., N.H., Vt., Mass., R.I., Conn., N.Y., N.J., Pa., Del., Va., W.Va., N.C., S.C., Ala., Fla., Ga., Miss., La., Tex., Ky., Mo., Ohio, Ill., Ind., Kansas, Nebr. Mich., Wis., Minn., S. Dak., (cult.), Iowa, Ont.); Stave oak (Ark.).

Sulphite Pulp.

Yield — 1,600 lbs.

Character — Difficult to pulp and bleach.

Possible uses — Few.

Soda Pulp.

Yield — 1,480 lbs.

Character — Difficult to pulp and bleach.

Possible uses — Few.

HICKORY — *Hicoria alba.* Wt. 40 lbs. Fiber 1.4 m.m.

Range — Ontario to Florida (Cape Canaveral and Tampa Bay) and west to Missouri, eastern Kansas, Indian Territory and Texas (Brazos River).

Common Names — Mocker nut (Mass., R.I., N.Y., N.J., Del., Ala., Miss., La., Tex., Ark., Ill., Iowa, Kans.); Whiteheart hickory (R.I., N.Y., Pa., Del., N.C., Tex., Ill., Ont., Iowa, Kans., Minn., Nebr.); Bullnut (N.Y., Fla., Miss., Tex., Mo., Ohio, Ill., Minn.); Black hickory (Tex., Miss., La., Mo.); Big-bud, Red hickory (Fla.); Hickory (Ala., Tex.); Hardbark hickory (Ill.); Hickory (Pa., S.C., Nebr.); Common hickory (N.C.); White hickory (Pa., S.C.); Hickory nut (Ky.); Big hickory nut (W. Va.); Hog nut (Del.).

Sulphite Pulp.

Yield — 1,680 lbs.

Character — Difficult to pulp; Readily bleached; Short fiber.

Possible uses — Same as aspen.

Soda Pulp.

Yield — 1,380 lbs.

Character — Readily pulped; Difficult to bleach; Short fiber.

Possible uses — Same as aspen.

LOCUST — *Robinia pseudacacia.* Wt. 41 lbs. Fiber

Range — From Pennsylvania (on the Appalachian Mountains from Locust Ridge in Marion County) to northern Georgia. Widely naturalized through cultivation and other agencies throughout the

United States east of the Rocky Mountains; possibly indigenous in parts of Arkansas (Crowleys Ridge, etc.) and eastern Indian Territory; also in the Great Smoky Mountains of eastern Tennessee (Sevier County.)

Common Names — Locust (Me., N.H., Vt., Mass., R.I., Conn., N.Y., N.J., Pa., Del., W. Va., N.C., S.C., Ga., Ala., Miss., Tex., Ky., Ark., Ariz., Ill., Wis., Ohio, Ind., Kans., Nebr., Mich., Iowa, Minn.); Black locust (Pa., Va., W. Va., N.C., S.C., Ala., Miss., La., Tex., Ark., Ky., Mo., Ill., Ohio, Ind., Iowa, Kans., Nebr., Mich., Minn.); Yellow locust (Vt., Mass., N.Y., Pa., Del., Va., W. Va., Miss., La., Ill., Ind., Kans., Nebr., Minn.); White locust (R.I., N.Y., Tenn.); Red locust (Tenn.); Green locust (Tenn.); Acacia (La.); False acacia (S.C., Ala., Tex., Minn.); Honey locust (Minn.); Bastard acacia (lit.); Pea-flower locust; Post locust (Md.).

Sulphite Pulp.

Yield — 1,970 lbs.

Character — Difficult to pulp; Very difficult to bleach; Short fiber.

Possible uses — Few.

Soda Pulp.

Yield — 1,700 lbs.

Character — Fairly easily pulped; Very difficult to bleach; Short opaque soft fiber.

Possible uses — Same as aspen.

YUCCA — *Yucca constricta.* Wt. 18 lbs. Fiber ......

Range — Southwestern Texas to southern Arizona; northern Mexico.

Soda Pulp.

Yield — 720 lbs.

Character — Readily pulped; Rather difficult to bleach; Short pithy fiber.

Possible uses — Few.

CABBAGE PALMETTO — *Sabal palmetto.* Wt. 23 lbs. Fiber—

Range — Coast region from North Carolina (Smiths Island, Cape Fear River) to Florida (Key Largo), and on the Gulf coast to the Apalachicola River.

Common Names — Cabbage palmetto (N.C., S.C.); Bank's palmetto (N.C.); Palmetto (N.C., S.C.); Cabbage-tree (Miss., Fla.); Tree palmetto (La.).

Sulphate Pulp.

Yield — 1,400 lbs.

Character—Readily pulped at low pressure; Fairly easily bleached; Pithy fiber of fair felting properties.

Possible uses — In the manufacture of book, magazine and similar papers.

Soda Pulp.

Yield — 1,150 lbs. of a low grade pithy fiber.

Character — Coarse, tender fiber; Impossible to bleach; Poor color.

Possible uses — Few.

THE END

Note: This article is to be reprinted as a pamphlet, which will be distributed by the United States Forest Products Laboratory at Madison, Wis.

George Allan, of the Buntin, Reid, Company, Limited, has returned from a business trip to Winnipeg.

H. G. French, of the Allan Paper Company, Toronto, is spending his vacation at Kirkfield, Ont.

Woodlands Section

COMMISSION TO INQUIRE INTO FOREST WEALTH

Ottawa.— The personnel of the commission which will inquire into the forest resources of Canada with a view to determining the need or otherwise of an embargo upon the exportation of pulpwood was announced last Tuesday by the Prime Minister.

Joseph Picard manufacturer, Quebec city, is named chairman of the commission and the other members are: Apollos Bamber Kerr, barrister, Toronto; Robert W. McLelland, barrister, Fredericton, N. B.; Joseph G. Sutherland, lumberman, Clyde River, N. S., and William Anstie, contractor, Vancouver, B. C.

The commissioners are instructed to inquire into and report upon the forest resources of Canada with particular regard to the following points:

The extent in each province of wood of various kinds available for pulp.

The quantity of wood so available on lands owned by the provincial governments and subject under provincial laws and regulations to restrictions requiring the partial or total manufacture of such wood in Canada.

The quantity of wood so available on lands owned by the Dominion Government and subject under federal laws and regulations to restrictions requiring partial or total manufacture in Canada.

The quantity of such wood on other lands and the conditions under which such lands are held whether by ownership or lease, whether by corporations or individuals, whether by citizens of Canada or other countries.

The quantity of pulpwood produced in each province of Canada during the past ten years showing the portion used in Canada and the portion exported.

The question of the prohibition or restriction of the export of pulpwood from Canada.

Any other matter touching upon the production, manufacture or sale of pulpwood essential to comprehensive consideration of the question of prohibition or restriction of the export of pulpwood from Canada.

The making of recommendations that may be deemed expedient for the conservation of pulpwood for present or future use.

Ernest Herbert Finlayson, acting director of forestry in the Department of the Interior, is attached to the commission as secretary.

Mr. Picard, as chairman of the commission, will receive $35 a day for every day during which the board is engaged in the work, while the other commissioners will get $25 a day. An expense allowance of $15 a day is permitted members of the commission in addition to actual expense of transportation. The secretary will receive a similar expense allowance while absent from Ottawa in pursuit of his duties.

THE PERSONNEL OF THE COMMISSION

In order to inform the industry as fully as possible of the situation, the *Pulp and Paper Magazine* telegraphed to all of the appointees to the commission, asking their present or past connection with or interest in the matter to be investigated. The following telegraphic replies have been received.

From The Chairman, JOSEPH PICARD

Telegram received. Have had no interest in the subject mentioned. Herewith extract from the Press

"Joseph Picard, general manager of The Rock City Tobacco Co., Ltd. (Quebec), is the son of a settler and was born in 1864 at St. Antoine, Temiscouata Co. Was educated at the "Académie Commerciale de Québec" Started business in the Supplies & Groceries Trade In 1899, he associated with Napoléon Drouin to establish the Rock City Tobacco Co., Ltd., of which he has not ceased to be the manager since its very foundation. Endowed to a high degree with a talent for organization, he has succeeded in conducting numerous enterprises, in helping in the social work of his community and besides in finding time to pursue studies in social and political economy. The tobacco industry in Canada is indebted to him for many remarkable accomplishments and he is regarded as an authority on the subject.

Although he is naturally inclined to avoid public honors and of a retiring disposition, his fellow citizens have always pushed him into the commercial and social current of his town. He was president of the Quebec Chamber of Commerce during the hard times of the war. He has been for many years a member of the National Executive of the Association of Canadian Manufacturers and Chairman of the Tariff Committee for 1922-23. He is Chairman of the Quebec School Commission since 1922. He is one of the best informed men in his calling, knows English as well as French and is an authority who is sure to be consulted on all kinds of commercial problems. Those who know him well all agree that the Government has been fortunate in choosing him and that nobody is better qualified to carry through the enquiry of the Commission on Pulpwood Resources".

* * *

From W. A. ANSTIE

Vancouver, B.C., August 20.

Replying your telegram. Have been actively identified since 1922 with lumber industry British Columbia. Age 42. Commenced career with Hon. W. C. Wells in Kootenays during 1900 and after five years became secretary Mountain Lumbermen's Association, which office held for seven years and resigned in 1913 to accept managing directorship largest operating lumber corporation in Mountains with five sawmills, and employing up to 1,200 men. Retired from that position last year, elected president Lumbermen's Association 1913 and have been active in many public organizations for past fifteen years. Organized first limit holders Association in Province in 1909 and personally directed campaign for stability of title to timber licenses which resulted successfully. For fifteen years have played leading part in matters affecting interests of industry as between governments and railways, also in relationship with allied industries, trade, extension, and marketing for over two years. Have conducted exhaustive study of pulp and paper industry for British Associates with view to establishment important operations in this Province. In the course of this investigation have visited practically all Canadian plants observing conditions and methods. Am personally interested in Western timber holdings and my other interests are for construction work and mining. Have travelled abroad extensively and am well posted regarding Canadian and American conditions.

* * *

From W. McLELLAN

Fredericton, N.B., August 20.

Born 1874. Graduated from New Brunswick University in Arts and Civil Engineering. Admitted barrister 1897 and in practice law since then; been prominently identified with lumber and pulpwood concerns. Organized a company and lumbered for ten years when mills burned and sold holdings. Organized New Brunswick Lumbermen's Association in 1918 and continued its secretary treasurer. Am director and secretary Miramichi Log Driving Company of New Brunswick. Organized and became president Palmer McLellan Company, Fredericton in 1920, which is now largest manufacturers of oil-tanned footwear in Canada. In 1919 joined board company of Belfast, which is one of Ireland's largest manufacturers of linen.

* * *

From our Toronto Correspondent on A. B. KERR

A. B. Kerr, of Toronto, who has been appointed as one of the members of the Royal Commission to investigate Canada's pulpwood resources was, during the three years from 1917 to 1919, junior counsel on the paper inquiry committee appointed by the Publishers' Association of Canada. He was also secretary of the paper committee. Born and educated in Toronto he graduated from Osgoode Hall after being at Victoria College, and was called to the Bar in October, 1915.

FORESTRY CONFERENCE MOVES WEST

Following a visit to the Ontario Provincial Forest Station at St. Williams the delegates to the British Empire forestry convention spent a day in Toronto where they were officially received by Premier Ferguson and Hon. James Lyons, Minister of Lands and Forests and later were driven about the city. Before leaving Toronto for the Government Forest Reserve at Algonquin Park and the Western Provinces, Lord Lovat and other members expressed themselves as delighted with the Government Experimental Station at St. Williams, especially in regard to the skilled silvi-culture of cut-over woods, and the satisfactory plantation mixture of Scotch fir and larch. Lord Lovat said he was particularly struck with the plantation of red pine, and the European plantation in various mixtures. Beautifully kept nurseries, 600 acres in extent, contained from ten to fifteen million plants and certain ingenious methods of watering dry, sandy soil appealed to him greatly.

Foresters Visit Abitibi Section

The British Empire forestry conference which is touring Canada over the Canadian National Railways completed one of the most interesting and instructive portions of their trip when they left Ontario here yesterday. Two days were spent in the heart of the woods, where they saw conditions and difficulties in the forests.

Saturday afternoon they inspected the plant of the Abitibi Pulp and Paper Company at Iroquois Falls and made a trip on a logging train into the heart of the pulp wood stands. They left Iroquois Falls for Minaki. J. H. Evans, Deputy Minister of Agriculture and others of the party here and accompanied them to Winnipeg.

The holders of existing debentures in the Northfleet Paper mill are being asked to express their opinions on a proposal to exchange their holdings for a new issue of 7½ per cent funding debenture stock. If they agree £75,000 additional preference capital will be issued.

Technical Section

REVIEW OF RECENT LITERATURE

SULPHITE PROCESS

E-4 Recovery of Sulphurous Acid and Heat from Sulphite Digesters. H. CLEMM and C.HANGLEITER. Eng. pat. 167,171; U.S. pat 1,429,128, Sept. 12, 1922.—Relief from sulphite digesters is passed without cooling into raw sulphite liquor contained in a closed lead-lined tank capable of withstanding pressure. The liquor, when sufficiently enriched with sulphurous acid and heated to a temperature of 90 C. or more is transferred directly to the digester freshly charged with wood.-A.P.-C.

WOOD ROOM APPARATUS

C-7 Barker. E. B. WHALLEY. U. S. pat. 1,440,042. Dec. 26, 1922. — The bark is removed endwise or longitudinally instead of circumferentially as usual: a separate device may first be used to remove a narrow ring of bark from one end of the log, and the latter is then mounted on rollers and given a longitudinal, and if necessary a rotary motion at a suitable speed through headstocks in which are arranged radially disposed rings or chisels or paring tools. The tools have a square face to bear on the surface of the log without cutting the wood. They may be drawn outwardly simultaneously by a cam and lever device to enlarge the opening for the insertion of the end of the log with the bark removed from the extremity. Springs, one for each tool, then bring the latter to bear against the log, and as it is advanced through the headstock the tools strip off the bark longitudinally. The rings of tools are arranged in series and each tool engages a different portion of the circumference of the log, so that collectively they cover the entire circumference.-A.P.-C.

C-7 C-8 Wood Preparation. C. K. BOYER. **Paper Trade J.** 76, No. 21, 47-48 (May 24, 1923). The respective advantages and disadvantages of dry and wet barking are outlined. The author found that best results were obtained by first passing the wood through a drum operating dry, in which it was 90% barked with a minimum of sorting back, and then through a drum operating wet from which it came practically all barked and washed clean. The merits of this procedure are described. The care to be given chipper equipment to obtain uniform chips with a minimum amount of sawdust and oversize chips is dwelt upon.-A.P.-C.

SULPHITE WASTE LIQUORS

E-1 The Determination of Bases in Fresh Sulphite Liquors made from Dolomite. RUDOLF SIEBER. **Papierfabr.** 21, 235-236 (May 6, 1923). The usual gravimetric methods for determining calcium and magnesium oxides in fresh sulphite liquors made from dolomite are hardly suitable as rapid control tests. A volumetric method is described in which the magnesium is determined by adding 20-50 cc. N/10 barium hydroxide solution to a 10 or 20 cc. sample of the neutralized liquor diluted to 200 cc.; the precipitated magnesium hydroxide is removed by filtration and the excess barium hydroxide titrated with N/10 HCl, 1 cc of N/10 $Ba(OH)_2$ corresponds to 0.002 g. MgO. Calcium is determined by precipitating the oxalate and titrating with permanganate. Tests comparing the volumetric with the gravimetric methods gave close agreement.-J.L.P.

E-2 Waterproofing Material from Sulphite Waste Liquor, and Process for Making Same. H. H. HURT. U. S. pat. 1,400,164, Dec. 13, 1921. — The composition consists of sulphite waste liquor freed from lime, with sodium sulphate and an insoluble soap.-A.P.-C.

E-2 Evaporating Sulphite Waste Liquor. H. A. E. NILSSON. U. S. pat. 1,440,026, Dec. 27, 1922. — The liquor is evaporated in an apparatus in which the compression of the vapors is utilized for heating the evaporator and the vapors are scrubbed with milk of lime or otherwise treated to eliminate acid before being brought into contact with metal heating elements which might be damaged by acid.-A.P.-C.

E-2 Tanning Material from Sulphite Waste Liquor. C. SORGER. U. S. pat. 1,414,312, April 25, 1922.—Concentrated sulphite waste liquor is treated with sufficient of an alkali bisulphate to precipitate the whole of the ligninsulphonic acid as the alkali salt.-A.P.-C.

E-2Tanning Material from Sulphite Waste Liquor. A. ROMER. U. S. pat. 1,441,243, Jan. 9, 1923. Same as Can. pat. 220,399. See **Pulp and Paper** 20, 791 (Sept. 14, 1922). **Paper Trade J.** 75, No. 12, 50 (Sept. 21, 1922).-A.P.-C.

E-2 Treatment of Sulphite Waste Liquor. J. S. ROBESON. U. S. pat. 1,445,603, Feb. 13, 1923. — The liquor is sprayed into air to effect oxidation and some evaporation with removal of free sulphur dioxide. Calcined magnesite or other suitable reagent is then added to neutralize acidity and the liquors, freed from any precipitate which forms, is evaporated to a specific gravity of 1.26 or to dryness. This treatment produces a product of strong adhesive properties, free from such alterations as may occur from undue heating, and adapted for fermentation to produce alcohol. -A.P.-C.

E-2 Sulphite Waste Liquor Emulsions for Core Binders, Etc. K. P. McELROY, assignor to Robeson Process Co. U. S. pat. 1,444,844, Feb. 13, 1923. — A small amount of soda sludge from petroleum refining is used with sulphite waste liquor to emulsify linseed oil or other oils for core, road, or briquette binders. -A.P.-C.

E-2 F-4 Recovering Solids from Waste Pulp Liquors W. H. DICKERSON. U. S. pat. 1,396,028, Nov. 8, 1921. Hot sulphite or soda waste liquors are permitted to undergo self-evaporation, additional water is removed by freezing out and the remaining liquor is dried by spraying into hot gases to obtain material adapted for subsequent fermentation.-A.P.-C.

E-2 Solid Constituents of Sulphite Waste Liquor. W. H. DICKERSON. U. S. pat. 1,297,039, Nov. 15, 1921.—Spherical solid particles glazed upon their surfaces are prepared by spraying the concentrated liquor into a hot gas.-A.P.-C.

E-2 Fertilizer from Sulphite Waste Liquor. Zellstofffabrik Waldhof. Eng. pat. 179,151, Apr. 1, 1922.

Sulphite waste liquor preferably concentrated is treated with burnt lime or magnesia in quantity sufficient to absorb the whole of the water content. The initial temperature of the liquor is preferably raised to 60° to 70° C., and peat dust may be incorporated with the lime. Bacterial nutrients such as phosphates potassium salts, or nitrates, may be added in the course of manufacture or during the grinding of the product. A.P.-C.

A-4 Mitscherlich Pulp. ARTHUR S. M. KLEIN. **Paper Trade J.** 76, No. 20, 41-45 (May 17, 1923). A discussion of quality of wood, length and thickness of chips, acid strength, temperature and time of cooking, and steam consumption in cooking and drying Mitscherlich pulp, from the standpoint of European, and more particularly Scandinavian practice, contrasting it with American practice.-A.P.-C.

E-2 Utilization of Sulphite Waste Liquor. P. A. PAULSON, U.S. Patent 1,393,241, Oct. 11, 1921. Same as Can. pat. 221,600 Aug. 1, 1922, — See **Pulp and Paper** 20, 791 (Sept. 14, 1922) **Paper Trade J.** 75, No. 12, 50 (Sept. 21, 1922).-A.P.-C.

E-2 Utilizing Concentrated Sulphite Waste Liquor. L. STEIN. Eng. pat. 153,546, Jan. 5, 1921. — Compositions suitable for various industrial purposes are prepared by mixing concentrated sulphite waste liquor of 34° to 37° Bé. (Sp. gr. 1.31 to 1.35) with up to 10% by weight of water insoluble resins of fatty or mineral oils dissolved in up to 20% of a volatile inert organic liquid such as benzine, benzene, carbon tetrachloride, etc. Such compositions form milky colloidal solutions when mixed with water.-A.P.-C.

E-2 Decolorizing Concentrated Sulphite Waste Liquor. R. ADLER. Eng. pat. 165,788, June 29, 1921. Sulphite waste liquor, or the residue left after the manufacture of alcohol therefrom, is heated under a pressure of several atmospheres with an alkaline-earth hydroxide or with a neutral salt in order to precipitate the organic matter. The precipitate is pressed and dissolved in an alkaline solution, filtered if necessary, and the filtrate dried and carbonized. The product is suspended in water and carbon dioxide is passed into the suspension to convert the sulphides present into carbonates. The resulting alkali carbonate solution is separated from the charcoal for further use. Alternatively, the charcoal may be washed with water before the conversion of sulphides into carbonates.-A.P.-C.

E-2 Tanning Composition from Sulphite Waste Liquor. J. K. TULLIS. U. S. pat. 1,430,477, Sept. 26, 1922. — A solution of commercial quebracho extract is made with unconcentrated sulphite waste liquor, which is acidulated with an aromatic sulphonic acid, e.g., cresol or napthol sulphonic acid.-A.P.-C.

E-2 Sulphite Waste Liquors. I. I. CHRAMTSOFF BUMAZHNAIA PROMYSHLENOST, I, Nos. 2-3, 237-277 (Sept.-Dec. 1922). The effect of sulphite waste liquors on the river water when used in boilers at the Suchon mill is discussed and analyses are given. Shutter's experiment of feeding domestic animals food containing concentrations of sulphite liquors is considered. The harmlessness of sulphite liquors is due to the rapid oxidation and neutralization of the sulphite compounds. The cooking liquors are germicidal and are harmful life. However, Lehmann's experiment has shown that sulphite cooking liquors have no bad effects on the fish in the river. The economy of evaporation of the waste liquors is discussed. The difficulty of evaporation is caused by the high viscosity of the liquors at moderate concentration.-M.L.C.

E-4 Sulphite Liquor Preparation. D. B. DAVIES and E. P. STRONG. U. S. pat. 1,424,883, Aug. 8, 1922. Sulphite liquor is led from a storage tank and returned from a circulation circuit so that it is discharged beneath the surface of the liquor in the tank after aspiration of sulphur dioxide in the circulating liquor. A.P.-C.

E-4 Sulphurous Acid from Sulphates. Metallbank und Metallurgische Gesellschaft. Ger. pat. 372,833. **Papierfabr.** 21, 279-280 (June 3, 1923). The furnace charge, consisting of a mixture of sulphates and combustible material according to Ger. pat. 227,175, is preheated by the waste heat from the combustion chamber. -J.L.P.

E-5 Liberating Cellulosic Fibers. G. A. RICHTER. U.S. pat. 1,427,125, Aug. 29, 1922. Fiber is obtained from raw material such as wood by cooking with a solution containing sulphur dioxide and a soluble sulphate such as sodium sulphate.-A.P.-C.

E-5 Filling Digesters with Heated Sulphite Liquors. H. CLEMM. Eng. pat. 168,866, July 25, 1921. — The digester is filled with hot liquor by means of a pressure pump, the digester being closed by an excess pressure valve which can be adjusted so that for any given temperature the desired quantity of sulphur dioxide is retained in the acid liquor.-A.P.-C.

E-5 F-5 Circulating Liquor in Digesters. ESCHER WYSS & Co. Eng. pat. 168,304, July 4, 1921. — Same as Fr. pat. 533,730. **Pulp and Paper,** 20, 654 (Aug. 3, 1922). **(Paper Trade J.** U. S. 6, 54 (Aug. 10, 1922). -A.P..C.

E-5 Hardening Fresh Sulphite Digester Linings. C. H. JONSSON. U. S. pat. 1,444,467, Feb. 6, 1923. Same as Can pat. 220,028. See this journal 20, 791 (Sept. 14, 1922). **(Paper Trade J.** 75, No. 12, 50 (Sept. 21, 1922). A.P.-C.

E-5 Yields in the Sulphite Process. R. DIECKMANN. **Wochbl. Papierfabr.** 54, 1241-1242 (May 5, 1923). The pneumatic packing of chips in Germany increases the pulp yield by about 8 Kg. per cu. m. of digester space; in Scandinavia, after steaming the chips and refilling the digester, the yield increases 7 to 9 kg. per cu. m. of digester space. In both cases the sulphite pulp was hard bleaching.-J.L.P.

ALKALINE PROCESS

F-1 Operating Control in Pulp Making. RUDOLF SIEBER. **Paper** 32, No. 1, 11-14 (Apr. 25, 1923). — An outline of the various control tests for sulphate, lime, green and white liquors, liquor during digestion, pulp, and lime mud from causticization, showing their importance in obtaining efficient operation. Methods are described in detail for the determination of the different sulphur compounds in the white liquor and for the analysis of the sludge from causticization.-A.-P.-C.

F-4 Recovering By-Products from Black Liquor. J. E. PLUMSTEAD assignor to Jessup & Moore Paper Co. U. S. pat. 1,442,393, Jan. 16, 1923. — The black liquor is heated to effect evaporation and incineration and the gaseous products from the heating are afterwards brought into contact with the insoluble material which remains from the extraction of the incinerated residue in order to obtain a fuel for heating the incinerating evaporator.-A.P.-C.

(Continued on page 854)

British Trade News

CANADA'S PULP POLICY

(From Our London Correspondent)

London, August 7, 1923

The Australians, when fixing their last tariffs, came to the conclusion that America had huge sums of money invested in Canadian industries. Being of that opinion — whether right, or wrong — they reduced the paper tariff for British mills and kept Canada on a list practically equal to that of a foreign nation. When interrogated as to why a preference was not given to Canada, an integral part of the Empire, Australians retorted that American money was invested in Canadian industries. Some time ago I wrote exposing the fallacy of the Australians' contention and pointed out to them that more foreigners were engaged in the British paper industry — selling, buying, and making — than was the case in Canada. It is to be hoped the forthcoming Imperial conference will settle things.

Now we have another side to the policy of allowing American money to be sunk in Canada. It comes from the pulp side and the British papers and trade journals have each received a copy of a letter written by Mr. N. Grattan Doyle, M.P. — Irishmen will recognize the name — who is not pleased with the Canadian policy of selling pulpwood to the U. S. It is an interesting document in view of the depleted resources of the U. S. and in parts of Canada. Raitt, noted Indian forestry research, stepped in some weeks ago and practically told buyers of pulpwood that in view of the world's shortage the great resources of India should be considered.

What ought to be Canada's Policy?

That is the question Mr. Grattan Doyle asks. He refers to the sale of pulpwood recently announced in the *Pulp and Paper Magazine* as having taken place in Nova Scotia and the letter shows the feeling that is existing amongst some Parliamentarians and the British public generally. There are arguments for and against the policy. For instance, if I was a Nova Scotia man I would say "well, if Britishers will not invest some of the millions they are hoarding up in London in the land of my country, I must sell to the next best customers — you cannot have it both ways". That is one reply for the British speculator and, no doubt, there are arguments on the other side.

"I feel that your readers will be interested in a piece of news which reaches me from Canada," writes Mr. Doyle. "It seems that an American firm has just purchased, in the province of Nova Scotia, between six and seven thousand acres of virgin forest suitable for the manufacture of paperpulp. This eagerness to acquire this land is manifest in the unusually high price which they have paid for it — from 35 to 40 dollars an acre.

"The incident has I think a significance both for Anglo-American relations and for the future of the British Empire. Not long ago the New York Bank of Commerce reported that the present supplies of American pulp would be exhausted within 30 years. America is, therefore, turning to Canada for her supplies and that Dominion is easily first amongst the countries which already export to the United States 40 per cent[*] of the wood pulp used there. But Canada not only possesses vast areas of timber available for pulp; it is not improbable that there will be added to these resources the straw from her 22,000,000 acres of wheatlands in the Prairie Provinces, which by a new process about to be tested in Kent, (England), may at no distant date be transformed on the spot into thousands of tons of pulp for high grade papers.

"This being so, what ought to be Canada's pulp policy towards the United States? At present she places an embargo (some provinces require wood from Crown lands to be partly manufactured in Canada. —Ed.) upon the export of timber for conversion into pulp in American mills and the natural result has been the setting up of American-owned mills in Canada. It is true both that the proprietors of these mills pay taxes to the Dominion and that thus far they have employed Canadian labor in running them. The question which arises is whether that process of peaceful penetration can go on indefinitely. In other words, is it quite politic that these considerable resources of ours should be owned and controlled by American citizens instead of being retained by Canadians for the Empire! The matter is one which with propriety might well be considered at the forthcoming Imperial Conference."

A Neglected Policy

This letter was written in the British House of Commons and if there are any more sales of pulpwood to America one may assume that pressure amongst the parliamentarians will be bought to bear to stop them directly, or indirectly. Of course American efforts in the past in the direction of re-afforestation are well-known in England. The feeling is that much time was devoted to money-making instead of pursuing a forestry policy equal say to that of Sweden. It is the want of this policy that creates a feeling that Americans should not be allowed to control pulp resources in Nova Scotia, or in any part of Canada.

A lot has been written lately on the forest policy of Scandinavia, which is pretty ripe in the minds of the British public, and this adds to the interest of the question raised by Mr. Doyle. Indeed, this week I was discussing the question of forestry with an Englishman who has returned from Finland, after a four months' visit. He told me that things were settling down again and the system of handling pulpwood and timber was one of the best. Farther, he told me that owing to some differences in Russia many of the pulpwood resources were being destroyed to prevent them falling into the hands of undesirables.

Russian Output

Figures or facts about Russia are difficult to get accurately. The latest, from what is supposed to be an official source, state some exports for May. They are greater when compared with March and April, and are as follows:— Paper 2,700 tons; cardboard 150 tons; cellulose 1,500 tons; wood pulp 700 tons. The cellulose factories in Russia are being reconstructed and repaired and during May the workers employed increased from 8,682 to 9,006. All the factories have a sufficient supply of fuel and raw materials to assure normal working conditions for at least six months.

Company Reports

James Hawes and Co., Ltd., have purchased the Syston mill, near Leicester, lately owned by W. H. Baldwin and Son, Ltd., and will carry on the manufacture of leather boards.

The Pulp Market

Conditions remain unchanged. The autumn, according to the opinions of sellers, has something good in store and a sharp and quick revival is being looked for. Groundwood is still in a strong position. Scandinavians report that their stocks are lower now than was the case this time last year.

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[*] This is misleading. "The United States import an average of less than 20 per cent of the pulpwood consumed there."—Ed.

PULP AND PAPER NEWS

Mr. G. C. Piche, chief forester of the Province of Quebec, is among the incorporators of the Fire Prevention League of the Province of Quebec Limited. The chief purposes of the League are the prevention of fires either on private or public property; to spread propaganda and to circulate literature and information, having in view the prevention of fires; and the establishment in towns and districts, clubs which will assist in the work of educating the public.

Seven members of the staff of the Riordon Company, Limited, were competitors in the Montreal lumbermen's golf tournament held on August 15 at the Beaconsfield links. These were Messrs. A. Fenton, F. M. Benson, Roy Campbell, H. J. Webb, A. D. Huff, E. R. L. Henry-Anderson and J. L. G. Brown. The first prize, for the best net score was won by Mr. E. R. L. Henry-Anderson, with a net score of 77 after a tie with Mr. Arthur H. Campbell. Mr. Henry-Anderson is a well known golfer and the winner of many cups.

The Anglo Newfoundland Development Company are largely extending their operations. A mill at Bishop's Falls, with the timber limits, has been purchased and a new newsprint machine is to be installed, which will be running by the fall of 1924, producing 25,000 tons per annum. This added to the production at Grand Falls will give an output of 75,000 tons. The company has also acquired a two-thirds interest in the new sulphite mill at Alexander Bay, 90 miles from Grand Mills; this will produce 25,000 tons per annum. The company now owns or controls 6,300 square miles of timber limits.

Sir Glyn West, president of the Sir W. G. Armstrong Whitworth Company Limited, London, England, was a visitor to Montreal last week en route to Newfoundland in connection with the large pulp and paper plant being constructed there by the company. He also came to Canada in relation to the plant for making paper machinery at Longueuil, acquired by Charles Walmsley & Co., (Canada) Limited, particulars of which were given in our issue of August 9. This company is controlled by the Sir W. G. Armstrong-Whitworth Co.

During the fiscal year ended June 30 last, the receipts of the Lands & Forests Department of the Province of Quebec totalled $3,643,407 and the expenses $870,544.

Mr. J. Patton of the Meade Patton Company, New York, was in Montreal last week.

It was reported that the Edwards Lumber & Pulp Company, which acquired the property of the Colonial Lumber Company, Pembroke, Ontario, would construct a pulp and paper mill. It is now understood that the directors have decided not to go ahead with the project, at any rate for the present.

In the official statement regarding the suspension of payment by the Home Bank of Canada it is said that among the bad and doubtful loans is one to a large pulp and paper company which has been operating near Vancouver, B. C., but which, for some time, has been closed down.

The Hon. Thomas A. Low, the new minister of Trade and Commerce, is a successful lumber merchant and manufacturer of Renfrew, Ontario.

A branch of the Engineering Institute of Canada, has been established at Kenogami, P. Q. A party of officers of the Institute inaugurated the branch, the meeting being held at the staff house of Price Bros. at Kenogami; some of the members are employed by Price Bros. Sir William Price was present at the meeting, and in promising the co-operation of his firm, alluded to the good work being done by the engineering profession in developing new districts of the province, especially in relation to water and electric power, and also the pulp and paper industries. The Montreal delegates afterward made a tour of the pulp and paper mills in the district, inspecting the work on the Saguenay and in the Lake St. John region. The party were the guests of Price Brothers.

A new 70 foot steel look-out tower for forest fire protection purposes has been completed near St. Quentin, Restigouche, N. B. Another has been erected on Mount Carleton, Gloucester County, with direct communication with the town of Bathurst, and a third will be erected on Blue Mountain, Restigouche, at the head of the Benjamin River.

Mr. A. Mackenzie Livingstone, of the British firm of Livingstone Page & Co., is now on a visit to Canada, and last week called on the trade in Montreal. His firm are paper makers' agents and represent Edward Collins and Sons and Henry Leigh Slater, Ltd. Mr. Livingstone is trying to find a market for esparto papers, tin foil papers, and fancy wrapping papers.

Mr. A. E. Tweedell, of Price Bros., has been elected a member of the recently organized Board of Trade at Matane, P. Q. Matane is the centre of an extensive pulpwood area.

Sir Frederick Becker and some of his associates in the Chicoutimi Pulp Company have been on a visit to the mill at Chicoutimi and to the limits on the Peribonka.

Mr. W. Innes, Montreal representative of the Interlake Tissue Mills, Limited, has returned from a trip to the Saguenay.

Addressing a meeting at Sault Ste. Marie, Ont., a few days ago, Hon. James Lyons, the new Minister of Lands and Forests in the Ontario Government, declared that his policy in regard to forests would be preservation and reforestation. He said that he was strongly interested in the development of Northern Ontario and that there would be no more wholesale selling of large timber limits. With this in view he forecasted a general survey of the timber survey of the north country.

Plans are on foot to make the Ontario provincial exhibit at the Canadian National Exhibition in Toronto this year one of the most outstanding attractions for foreign visitors. This year a huge floor space has been secured and the Northland exhibits will be displayed by districts. Wood pulp and all allied activities will have products and processes shown and various paper industries will also be represented.

Bushmen and camp men are starting a general rush for the Spanish River Pulp and Paper Mills' camps up the Algoma Central Railway and other Northland sections. W. R. McKibbon, of the woods department of the company, states that the company is engaging all the men that could be secured and that a shortage of labor is in sight.

Wilfrid Belanger, aged 17, was rather seriously injured at Sault Ste. Marie, Ont., a few days ago, when he was struck by an automobile driven by Col. P. B. Wilson, of the Spanish River Pulp and Paper Mills, Limited. His collar bone and nose were broken.

The Lawrason-Doughty Company, manufacturers of paper boxes, which for the past twelve years has occupied premises on Church Street, have moved into their new plant at No. 11 Hamilton Street, Toronto. The company have erected a compact one-storey factory and the plans provide for two additional storeys later should business warrant. Considerable extra equipment has been added and the firm report a growing demand for their products.

The Toronto Carton Club held one of its regular meetings at the King Edward Hotel on August 7 and, following a luncheon, matters of interest to the trade were informally discussed. A guest of the Club was R. F. Moncrieff, manager of the Frontenac Paper Box Company, Kingston, Ont., which is a branch of the Fisher Manufacturing Company, Sherborne Street, Toronto.

J. Northey of the Telfer Manufacturing Company, Toronto, has returned after a pleasant holiday spent in Muskoka.

Centre Island, Toronto, was the scene of a regular field day for the paper box industry recently when three different firms held their annual picnics there. These were the Fielder Paper Box Company and the Automatic Paper Box Company, Toronto, and the Hamilton Paper Box Company, Hamilton, Ont. There was an intermingling of the employees of the various firms in sports and contests and the afternoon proved a thoroughly enjoyable one for all the paper box makers.

W. P. Bennett, President of the Rudd Paper Box Company, Limited, Toronto, has returned from an enjoyable holiday at Frenchman's Bay, Ont.

Charles V. Syrett, of the Victoria Paper and Twine Company, Limited, has been spending a few holidays up at Franklin Camp. That his son "Wallie" takes after his dad in his keenness for fishing is indicated by the fact that the young chap landed one of the biggest bass that has been caught at the camp this summer. It weighed a little over four pounds.

A. T. Brown, of E. Pullin, rag and paper stocks, and W. B. Christie, of the Hinde & Dauch Paper Company of Canada, Limited, Toronto, have returned from a motor trip through New York State and adjoining territory in the course of which they visited a number of the paper mills. They were accompanied on the trip by their families.

O. H. Moore, General Manager of the Hinde & Dauch Paper Company of Canada, Limited, Toronto, is spending a few weeks vacation in the Muskoka region.

The Dominion Embossing Company, Jarvis Street, Toronto, which recently went into liquidation, was bought in by Jess Jaffe for $9,175. A number of Toronto paper houses are creditors of the firm.

An experiment which will be watched with interest by lumbermen of Northern Ontario is being undertaken by Shepherd & Morse of Ottawa. Instead of waiting for the drive they are bringing their logs from Kippawa to Ottawa by train loading some ten cars a day.

Allan Toy, of the Canada Paper Company's Toronto office is spending his holidays in the Georgian Bay district.

Harvey G. Ellis, of the city sales staff of the Barber, Ellis Company, Toronto, has gone on a trip to the Pacific Coast.

The Interlake Tissue Mills have secured space at the National Exhibition in Toronto and are arranging for a novel display of new uses of crepe tissues.

Peter Christie, of the wrapping paper department of the John Martin Paper Company, Winnipeg, was a business visitor in Toronto last week.

I. H. Weldon, President of the Provincial Paper Mills, Limited, Toronto sailed for home from England on the "Empress of Britain" on August 15.

NEW BRUNSWICK NEWS

The Buckley Estate of Newcastle which sued fire insurance concerns for $112,000, has received a verdict for $24,800. The fire insurance companies refused to pay the $112,000 and the case was brought to court. The plaintiff estate claimed the lumber and pulpwood destroyed by fire reached the valuation named. Mr. Justice Chandler of St. John after an extended hearing which included sessions in different parts of New Brunswick, gave judgment for $24,800. He has reserved decision as to costs. The costs will be heavy owing to the unusually large number of lawyers retained by the different parties in the suit. The Liverpool, London and Globe Fire Insurance Company, was ordered to pay one thirteenth of the sum awarded. The Buckley Estate may appeal the verdict, judging from present indications.

Hugh Chisholm president of the Nashwaak Pulp and Paper Company of St. John, N.B., is now in Nova Scotia and New Brunswick. The visit of Mr. Chisholm is said to be in connection with a deal in which the Nashwaak interests are involved. Dame Rumor even goes so far as to say, the Nashwaak group will take over the Clarke mill at Bear River and some pulpwood areas in Nova Scotia also.

More pulp has been exported from Bay of Fundy ports during the present summer than ever before. Development of Digby as a pulp exportation centre has resulted in regular calls to that part. In some instances the steamers bound for English ports load part of the cargo at Digby and the balance at St. John, crossing the bay to secure the remainder. A strike of longshoremen at the port of Chatham has somewhat interfered with shipments of pulp from that port by steamer.

The slash burning edict of the New Brunswick government will enter into effect this fall. All settlers desiring to burn slash are asked to start the slash fires in September, October and November. The rule is expected to act as a substantial preventive for forest fires by the department of lands and mines. Spring slash burning has been responsible for some of the most devastating forest fires in the past.

FARM PROPERTY VALUE IN N. S.

Figures compiled by the Dominion Bureau of Statistics show that the value of farm property in Nova Scotia has increased by 18 per cent. in the ten years from 1911 to 1921. The value of farm property in Nova Scotia in 1921 was $136,841,593, as against $115,974,892 in 1911. Farm acreage was 4,723,550 in 1921, as against 5,260,455 acres in 1911, and 5,080,901 acres in 1901.

UNITED STATES NOTES

Dr. Arthur D. Little, of Cambridge, Mass., past president of the American Chemical Society, sees in millions of acres of cut-over yellow pine lands in the South forest reserves sufficient to maintain a big paper industry provided the proper research facilities are granted to chemists to adapt the second growth material to the needs of the industries. Commenting on the statement prepared by Col. W. B. Greeley, chief of the United States Forestry Service, for the guidance of the member organizations of the Federated American Engineering Societies, Mr. Little asserts the necessity of research, declaring that huge quantities of cord wood now wasted could be made to yield by-products with profit. "The proposed and perhaps impending Canadian embargo on pulpwood," said Mr. Little, "invests with new and added interest our great reserves of Alaskan spruce, which, if developed wisely, should enable us to supply the world with news print paper for many years to come. Of more immediate interest, however, are the supplies of gum woods, tupelo and pine available in our Southern States in amounts sufficient to support an extensive and diversified paper industry. The permanency of a paper industry when once established in the South, can be insured by reforestation with rapidly growing trees like loblolly pine, and even more securely in the Gulf States by plantings of bamboo, which is incomparably more productive than any wood, and which yields a fiber ideal for papermaking."

A factory for the manufacturing of corrugated boxes, said to be the first to be established in the Southwest, will be opened at Love Field, Dallas, Texas, on September 1, according to an announcement by Hugo Schoellkopf, general chairman of the Dallas Manufacturers' Association. J. H. Oppenheim of New Orleans, head of the new enterprise, which is capitalized at $100,000, already is in Dallas superintending the installation of machinery. The new industry will be known as the Texas Corrugated Box Company.

A Richmond Va., firm is planning to manufacture paper raincoats to retail at 25 cents each. The garments are to be made from waterproof paper in only four sizes —men's 46, women's 36, and the other two for misses and children. A capelike arrangement will obviate the necessity for sleeves and there will be no distinction in styles between the sexes. All garments will be grey. They will be packed in sealed envelopes, 5 x 7 inches, thereby making it possible to carry the raincoat in the pocket. According to the manufacturer, the coats have been tried out in a rainy spell and found to weather the elements most satisfactorily. The initial capacity of the manufacturing plant will be 1,000 garments a day, the output to be increased with an expected rising demand.

At a hearing last week in Washington before the Tariff Commission, which is investigating duties on casein under flexible provisions of the tariff law, manufacturers of coated paper declared a reduction in duty is imperative. Spokesmen for dairy interests were also on hand to insist that the present duty of 2 1-2 cents per pound is needed to give proper protection to this dairy product. Martin Cantine, chairman of a committee of coated paper manufacturers, was the chief spokesman for the paper industry. Mr. Cantine said that the effect of an increase in the price of coated paper has been to force a number of publishers to use other varieties of paper as a substitute. "The industry has been very hard hit," said Mr. Cantine, "We believe the farmer should have protection, but we believe that there should be such a thing as live and let live. Coated paper is a very highly competitive article and there are other papers which can be used in its stead if the price goes too high." Mr. Cantine added that the paper manufacturers have bought casein for as low as six and one-half cents a pound and that in the spring of 1922 the price was eight cents a pound. Following the enactment of the present tariff law the price advanced as high as 30 cents per pound, but has since dropped to 16 1-2 cents per pound.

Planters in Hawaii are turning the waste fibers of sugar cane over to a new use. These fibers were discarded as being of no value until some practical and scientific minded person conceived the idea of utilizing them in manufacturing the paper which is being used by pineapple planters for protecting plants from weeds. Broad strips of this paper are stretched over the soil where the pineapples are planted and it is claimed that an increased production of about 50 per cent. has been obtained as a result. The fruit is planted in loose soil which is likewise very conducive to the growth of weeds. It has been found that the paper smothers the weeds and retains the moisture in the soil. The pineapple plants will grow up through the paper.

The Paper Industries Exchange, the first industrial exchange in the country, organized by the Chicago Board of Trade primarily for the elimination of waste in the paper industries, opened its floor to trading last week. According to John R. Mauff, Executive Vice President of the Board of Trade, who organized it, the purposes of the exchange are to provide a trading place for members, to promote uniformity of trade customs, to provide expeditious settlement of trade disputes on principles of justice, to promote co-operation between producers and buyers in standardization of products and to provide an efficient method of inspection. It is also the aim of the exchange to improve labor conditions and relations between labor and industry and to build up a demand in foreign markets for American products. Market reports and other information will be gathered and disseminated. It is planned to open branch exchanges in New York and San Francisco.

The California Redwood Association is putting into effect reforestation measures by which it is hoped the giant redwood trees will be saved from entire extinction.

Ernest R. Evans, Vice Consul in Mexico, has made an analysis of statistics during the first 4 months of 1923, as compared with the previous two years, which would seem to warrant the conclusion that the rapid development of German paper sales in Mexico during the months of January to April of this year have been realized at the expense of American paper exporters. The imports of paper from Germany are said to be mainly of a cheap quality, and this report seems to be confirmed by the customs valuation of 13 cents per kilo during the first 4 months of 1923, compared with 32 cents in 1922 and 20 cents in 1909-10. Imports during 1923 and the previous two years averaged approximately 30 cents, an increase of 8 cents per kilo over 1909-10.

F-5 H-0 Production of Pulp. Zellstofffabrik Waldhof. Aus. pat. 866,923. **Wochbl. Papierfabr.** 54, 1371 (May 19, 1923). Cellulosic material is treated at the usual or at a moderately elevated temperature with hypochlorite solutions, thereby oxidizing the lignin which can be dissolved in alkalies. At the same time, or later, the material is subjected to the action of alkalies, sulphur mixtures of these substances.-J.L.P.

F-5 H-0 A New Process for the Production of Pulp. J. F. CLERE. **Schweizerisch Technikerzeitung** 20, No. 9 (Mar. 1, 1923); **Papierfabr.** 21, 201-203 (Apr. 15, 1923). A description is given of the Devains chlorination process which consists essentially of the following phases: (1) cooking of the raw material in an alkaline solution: (2) chlorination of the resulting material, using chlorine hydrate — $Cl_2.8H_2O$; (3) solution of the chlorinated products in an alkaline solution; and (4) bleaching of the half-stuff in a chloride of lime solution. The chemicals, with the exception of lime, are prepared by the electrolysis of sodium chloride. A yield, 90-95% of the cellulose in the raw material, of superior pulp is obtained. The process has given good results with different kinds of straw, as esparto and bamboo.-J.L.P.

F-5 Chemistry of Pulps; A Comparison of the Chemical Changes of Jack Pine and Aspen Woods Cooked by the Soda Process. MARK W. BRAY and T. M ANDREWS. **Paper Trade J.** 76, No. 19, 49-51 (May 10, 1923). — The chemical changes which take place in jack pine and in aspen wood have been studied. Under the conditions of the experiments the rate of the chemical changes taking place in the woods was greatest during the initial part of the cook. At the second hour of cooking or after one hour at maximum pressure the process is practically complete. Cellulose begins to decompose very appreciably one-half hour before maximum pressure has been reached at a temperature of 110°C. During the early stages of cooking, cellulose decomposes at a greater rate than does lignin Later on in the cook the rate of lignin removal is greater than that of cellulose. The pentosan content of aspen is reduced rapidly during the early stages of the cooking process to a constant value of 7.7%. The pentosans are present in the wood in at least two forms; one readily removed from the cellulose nucleus by hydrolysis and the other held in a more stable combination with the cellulose.-A.P.-C.

F-0 Method for the Manufacture of Paper Pulp and Apparatus Therefor. V. BERNOT and R. FOURNIER. Eng. pat. 178,962, Feb. 1, 1921. — Same as Fr. pat 523,871. See **Pulp and Paper** 20, 462, (June 1, 1922). **Paper Trade J.** 74, No. 23, 95 (June 8, 1923).-A.P.-C.

F-0 Dissolving Incrustants from Chlorinated Cellulose Materials. A. R. DEVAINS. Eng. pat. 189,561, Sept. 5, 1921. After chlorination of cellulosic materials containing lignin, it is washed by means of alkaline liquors which have previously been used for lixiviation of cellulosic material. Organic products are thereby removed from the chlorinated cellulose without imparting to it a reddish tint.-A.P.-C.

F-0 Manufacture of Pulp from Peat. A. L. BURLIN. Eng. pat. 168,355, July 3, 1920. — Strong fibrous peat is freed from foreign substances, boiled in a cast iron boiler for 2 hr. with a 0.02 to 2% solution of caustic soda, washed, drained, and then treated for half an hour with a 2% calcium hypochlorite solution. A small quantity of sodium bicarbonate is added, the mass is stirred, acidified, preferably with sulphuric acid, and washed with cold water till neutral. The material if filter-pressed and may be treated in a paper mill for the manufacture of light brown paper, which can be dyed any color, preferably by means of aniline dyes. The filter cakes may be bleached With finer fibrous peat a 1 to 10% solution of washing soda is substituted for caustic soda. A further bleaching operation for 30 minutes may be necessary.-A.P.-C.

F-0. — Alkaline Processes of Pulp Manufacture and Equipment. Continuous Cooking Under Pressure of Vegetable Materials. RAYMOND FOURNIER. **Papeterie** 45, 270-274 (March 25, 1923); **Paper** 32, No. 5, 5-6, 2 (May 23, 1923). — The author briefly discusses the merits of such a process and the principle on which a suitable digester could be constructed. (Compare Fournier. **Pulp and Paper** 20, 635, July 27, 1922). -A.P.-C.

F-0 Changing the Physical Nature of Pulps. ERNST BECKER and CARL G. SCHWALBE. Ger. pat. 371,507; addition to 369,606. **Papierfabr.** 21, 198 (Apr. 8, 1923) . Instead of using alkaline earth compounds, magnesium oxide or hydroxide and water are employed at about 100°C. The solubility of the magnesium compounds are increased by adding organic or inorganic salts and acids.-J.L.P.

F-0 H-0 Chemical Pulp by the Chlorine Process. Fr. KUTTNER, EMIL SIDLER, ERNST PROFELD and MAX STEUDE. Ger. pat. 370,346. **Papierfabr.** 21, 185 (Apr. 1, 1923). The raw plant material is subjected to treatment, either before or during the chlorination. with hydrogen peroxide, oxene or ozonized air.-J.L.P.

F-0 Oxidation Process for the Manufacture of Paper Pulp. G. A. MOURLAQUE and J. J. B. PARENT. Eng. pat. 185,421, Aug. 31, 1922. — Vegetable material is transformed into pulp suitable for paper, etc., by treatment with oxygen. The divided and moistened wood, etc., is preferably placed in an autoclave and oxygen, which may be ozonized and obtained from liquid air, is led in under a pressure of 2 to 5 atmospheres for 3 to 6 hr. Alternatively, the oxygen may be generated in the autoclave by dissolving sodium peroxide in water or by the action of sulphuric acid on sodium peroxide or on barium peroxide.-A.P.-C.

STANDARDIZATION

R-0 Standardization of Fine Papers. R. E. RINDFUSZ. American Writing Paper Co. **Paper** 32, No. 1, 7-8 (Apr. 25, 1923). — A discussion of the advantages to both manufacturers and consumers of standardizing paper grades, giving a concrete example of the saving effected by such standardization in the case of the American Writing Paper Co.-A.P.-C.

BATHURST MILL IN OPERATION

Announcement has been made that the Bathurst Company Limited of Bathurst, New Brunswick is now producing newsprint. During the past winter, this Company erected a machine room large enough to accommodate two newsprint machines, each 166 in. wide, which were ordered from the Charles Walmsley Company Limited. The Company has for a number of years been producing sulphite pulp as well as sulphate, and last winter installed a groundwood mill to supply the newsprint machines. The mill is laid out very well indeed, and will no doubt be one of the leading factors in Canada's large production of newsprint paper. Angus McLean is president and general manager of the Company, Alex McLean, assistant general manager, John Ball, manager of paper production and Dr. John S. Bates in charge of technical control and research work.

The Markets

CANADIAN TRADE CONDITIONS

Montreal, August 21. — Business in the Montreal district is slow. It has fallen off considerably. One may try to explain it as best he can — it may be due to the season or to general commercial conditions, or other causes, but of the existence of dullness, there is no doubt. A representative of a company with connections among printers attributes the scarcity of orders to the slackness of that industry. The printing trade is very, very quiet; collections, too, are slow, and for the moment there is a want of life to the local paper business. All trades are subject to these ebbs and flows, and for the time being the paper trade is feeling the effect of a backward movement.

There is, however, every reason to expect a revival, the position being fundamentally good. The July statement of Canadian trade indicates a considerable gain in the total business, about $29,000,000. The imports were $77,000,000 against a little less than $61,000,000 in July, 1922; while the exports were nearly $83,000,000 as compared with something over $70,000,000 in July of last year. The important part which pulp and paper plays in our exports is again illustrated by the July figures. The chief increase in our total sales was in this department. For the four months of the fiscal year, the exports of Canadian wood products and paper totalled just over $90,000,000, an increase of $24,000,000 as compared with the corresponding period in 1922.

The demand for fine papers has declined, while orders for toilets and tissues are fairly good. Wrapping papers are in moderate request. The board mills are quiet, but there is a little more activity than was noticeable for a month or two, and the outlook is stated to be favorable. Competition has been very keen, and the recent reduction in prices was due to the aggressiveness in Canada of American manufacturers.

There is no change to report in the newsprint situation. The production is keeping up in good shape, although the demand is a little less owing to seasonal conditions. There are reports of still further developments in the way of new mills. The schemes are still in their early stages, but if they materialise, the output in the Province of Quebec will be substantially increased. The concerns referred to are able to secure financial backing, some of it being from across the border. How far the threatened embargo has influenced the tentative plans it is impossible to say, but there can be little doubt that if it should go into effect, other companies will construct mills here.

In the pulp division sulphite is moving slowly. Groundwood however, is in active demand and prices are very firm, there being comparatively little on the market. Bleached sulphite which has been quiet for some time, is now being bought a little more freely. The stocks on hand in Canada are light.

ONTARIO MARKET NEWS

Although business generally in the pulp and paper industry in Ontario is still somewhat dull there have been signs of increased activity in a number of individual lines which appear to indicate a gradual return to better conditions. A slight improvement is noted in sales of wrapping paper and paper bags and the printing trade, although still quiet, is using a little more paper than it has absorbed during the early summer. Book paper mills and distributers of the product are none too active just now. While publication firms are using fair quantities of book the fact remains that the catalogue trade is dull, which affects consumption of book paper to a considerable extent. On the other hand coated paper mills report a fair volume of business. Newsprint continues unusually strong. All of the mills are busy and many of them are making records as to production. Some of the Ontario jobbers are inclined to the opinion that we have not yet reached the stage where no new sources of consumption can be found. Certain American mills, as is well known, are of the opinion that the present demand for newsprint will soon fall off, but that view is contrary to the one generally held here. There is every indication that the present satisfactory demand will be maintained throughout the year. Prices of paper generally are unchanged although one or two slight adjustments have been put into effect recently.

PULP — Practically all lines of pulp continue to show a stiffening tendency and while there has been no advance in prices they have remained firm. While the manufacturing mills report a fair demand it would seem to be a fact that the paper mills are only buying from hand to mouth and that none of them are laying in heavy stocks. According to one big buyer of pulp, imports just now are very light and there is practically no spot stuff on the market. Groundwood continues to be quoted at around $38.00 and prices of chemical pulps remain unchanged.

COATED PAPER.— A slight readjustment of prices has been put into effect with a view to the prevention of overlapping in the marketing of the product and paving the way for an active fall trade. The Long List price was increased on an average of a cent a pound. August business by the mills so far has exceeded that of July and it is expected that there will be a further increase as the result of the Canadian National Exhibition which always brings many buyers of paper to Toronto. Quite a number of the coated paper firms and other paper houses, in addition to making exhibits, have arranged to entertain paper industry visitors to the show. The coated paper trade reports a considerable increase in the consumption of their product as a result of the activity in paper and printing circles which always precedes the big show.

PAPER BOXES — The paper box industry is going along steadily and although a little slow in some lines it has picked up in others. In the standard line of cartons business continues rather quiet but on the whole the industry is using a fair amount of board. Many of the carton firms are specializing on novelties and have evolved ideas which have furnished good business in lieu of that lost through the falling off in demand for the regular lines. The industry on the whole is on a satisfactory basis and it is looking forward to good fall trade.

BOX BOARD — The board mills report improved conditions. A few weeks ago many of the mills were running light but now most of them are operating at capacity. The Hinde & Dauch Company in Toronto, for instance, are running night and day and are turning out fifty tons of board daily. The Canadian Paper Board Company also are considerably busier than they were and are operating at capacity again, while there appears to be a ready market for the product.

RAG AND PAPER STOCK — Paper mills are using waste paper freely and are demanding all available supplies from the collectors. The rag market, too, is improving. There is a scarcity of cotton rags and there has been a big drop in the export from Europe of roofing rags which has had the effect of boosting the roofing rag market here. Prevailing prices are: Paper stock, No. 1 hard white shavings, $4.10; No. 1 soft white shavings, $3.40; heavy books and magazines, $1.90; ledgers and writings, $2.30; No. 1 kraft, $2.50; newspapers, $1.25; No. 1 mixed papers, $1.10; No. 1 miscellaneous $1.00; No. 2 miscellaneous, 80c; No. 1 white shirt cuttings, 12¾c; fancy shirt cuttings, 6c; canton flannels, bleached, 10½c.

NEW YORK MARKETS

New York, August 18 — (Special Correspondence) — All signs point to demand for paper of most kinds quickening. At least inquiry is steadily expanding, and it naturally follows that with consumers showing greater interest they are increasing their buying to some extent. In other words, it appears as if the usual stimulation of demand during the early fall is beginning to be felt. Publishers, printers and other large users of paper are still placing orders in a reserved way, seldom ordering other than supplies for which they have direct need, and yet, with the midsummer dullness gradually clearing, the movement of paper from mills to consuming centre is unmistakably on the rise.

The market displays a very healthy tone. So far as can be observed stocks of paper at mills, in jobbers' warehouses and in the hands of consumers are light, probably lighter than they usually are at this time of the year. Demand for several months has been confined chiefly to actual requirements, and manufacturers have wisely endeavored to keep their production close to the level of their commitments. The market consequently is in no top heavy condition, such as has been experienced on several occasions in recent years. Increased demand at this time would necessitate larger production almost at once; this has been proved lately or since demand has broadened a little as manufacturers have increased their output in like proportion. Paper mills of the country are running at a better rate of capacity today than since the spring, and reports that are constantly coming in from mill centres tell of additional speeding up of production.

The outlook for newsprint is pleasingly favorable. Following the customary summer lull, publishers are securing more and more display advertising and the size of the issues of the different newspapers is gradually getting back to where it was several months ago. As an instance of what newspaper publishers have to look forward to, the Ford Motor Company, of Detroit, builders of the most popular make of automobile, announced yesterday that it will spend no less a sum than $7,000,000 for advertising its motor cars in the daily press of the country during the next year. This is merely one illustration of the immense advertising campaigns that are being planned, and it begins to appear as though newspaper publishers are about to experience a period of greater volume of advertising than they ever before have enjoyed. This will mean, of course, a tremendous consumption of print paper which should keep the paper mills in this country and in Canada fully occupied.

Current demand for newsprint is keeping pace with the present output, so that no great carryover of print paper into 1924 is looked for. On the other hand, with many new machines coming into production in Canada next year, the outlook for newsprint manufacturers is that more competitive conditions can be expected.

Book papers are moving in good volume and demand is gradually increasing. Most book paper mills are well supplied with orders, from both contract and transient buyers, and the tone of prices exhibits more firmness than in some weeks. Signs are that bottom market levels for the present movement have been touched and that any further fluctuations will be in an upward direction. Quotations are tending higher and manufacturers are growing firmer in their demands for the figures asked.

There has been a marked improvement in demand for box boards. The spurt in prices of waste paper apparently forewarned paper box manufacturers that prices of board would advance, and they flocked into the market and placed orders for appreciable amounts of board, with the result mills are now better fixed with commitments than at any time since the summer set in. Prices have stiffened a little and the trend is strongly upward. Plain chip board is quoted by eastern mills at $60 a ton f.o.b. New York, and news board at $62.50, and in some cases where manufacturers are especially well supplied with orders slightly higher prices are named. The last report of a service bureau covering the board industry cites figures showing that mills are working at 90 per cent. of capacity, and that they have orders on file which will take their output for at least three weeks ahead.

Nothing of importance has developed in coarse papers. A routine demand exists for wrapping and tissue papers, with prices steady. Fine papers are in good call for this season, and quotations are fully maintained.

GROUNDWOOD — While nearly every kind of raw material used for manufacturing paper is in a firm market position, ground wood probably is the strongest item of all at present. Low water in mill streams, which has curtailed production and made grinders cautious about disposing of any surplus supply they have on hand, has served to strengthen the market to a pronounced degree, and prices of mechanical pulp are firmly on the uptrend. Moreover, as is invariably the case when low water affects production, demand in the open market is increasing, as a good many consumers who ordinarily make most of the pulp they use are obliged to look elsewhere for supplies.

Domestic grinders quote around $38 a ton f.o.b. pulp mills for spruce ground wood for prompt shipment, and any pulp offered at this price basis is reported meeting with a ready sale. Consumers in this country are securing a large part of their supply at present from Canada, and grinders across the border are said to be freely securing $42 and $43 a ton f.o.b. shipping points, with some sales reported up to $45. Canadian ground wood, of course, commands higher f.o.b. prices than domestic pulp because the former is hydraulically pressed and therefore contains less moisture and costs less to transport to consuming centres.

CHEMICAL PULP — Chemical wood pulps have developed a little softer price tone. No broad changes have developed in market levels and yet it is apparent that sellers are not as bullishly inclined as they were and that in some instances at least they are shading asked prices to move certain lots of pulp. Kraft pulp has weakened to a noticeable degree. Sales of foreign No. 1 kraft at 3.10 and 3.15 cents a pound ex dock New York have been reported and in one case a 5,000-ton lot of imported kraft was reported sold to a board mill at 3 cents on the dock New York. Unbleached sulphite is easier, with some brands of foreign No. 1 sulphite reported available at 3.25 cents and less per pound ex dock, and with domestic news grade said to be available down to 3 cents at pulp mills. There is but a routine call for bleached sulphite, and quotations on foreign range from 4.25 to 4.75 cents ex dock for No. 1 quality while the domestic product is quoted at 4.50 to 5 cents f.o.b. producing mills. Bleached soda pulp is quoted at 3.75 to 4 cents a pound at pulp plants, with a majority of manufacturers accepting orders at the lower figure.

No additional news has been received concerning the threatened strike of pulp mill workers in Norway. The strike, if it occurs, is scheduled to go into effect August 23, and advices state that the mill owners are not disposed to grant the demands for higher wages, which would intimate that the strike may materialize.

RAGS — Demand for some grades of papermaking rags holds up very well but there has been less activity in other descriptions this week. Viewed as a whole, the market is fairly firm, with dealers laying stress on the small stocks they own and the light arrivals of fresh supplies from country sources, and giving this as an excuse for the stiff prices quoted. Felt paper mills have let down in their buying to quite a noticeable degree, and prices of roofing stock consequently have softened slightly. Dealers in New York, however, still report sales of No. 1 packing at 1.60 cents a pound f.o.b. this city, while No. 2 roofing stock is bringing 1.40 to 1.45 cents. Foreign roofing rags are firmly held and importers are not hesitating to refuse mill offers which do not come up to their ideas of value. Dark colored cottons are available in small quantities at 1.60 cents per pound ex dock New York but higher figures are demanded for tonnage lots.

Only certain grades of new cuttings are moving in worthwhile amounts. No. 1 white shirt cuttings are selling at 12.50 cents a pound at dealers' shipping points, unbleached muslins at 11.25 cents, and blue overall cuttings at 8 cents, whereas other new cuttings are largely neglected. Old white rags are quotably steady but thirds and blues are quieter and a little easier in price.

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WOOD PULP

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AND

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PAPER STOCK Low grades of waste paper have declined slightly this week, owing to the retirement of some box board mills as buyers, but the reaction in prices has been narrow and indications are that any increase in demand would immediately result in the market moving back to its previous high level. Folded newspapers have sold at 1.15 to 1.20 cents a pound f.o.b. New York, No. 1 mixed paper at 95 cents a hundred pounds, and city mixed paper at 65 cents, these prices representing a drop of about $2 per ton from the top levels prevailing a week ago. Shavings are quotably steady, and so are books and magazines. Dealers generally want 2.10 cents a pound or higher for heavy No. 1 book stock at shipping points, while No. 1 hard white shavings are quoted at 4.25 to 4.50 cents New York, and No. 1 soft white shavings at 3.40 to 3.60 cents. Old kraft paper is firm at around 2.25 cents per pound at dealers' points, and ledger stock is quotably steady at 2.15 to 2.25 cents.

OLD ROPE AND BAGGING — Consuming demand for old rope continues rather quiet but there is a growing call for strings. Sales of mixed strings have been noted at 1.25 cents a pound f.o.b. New York in some cases, whereas old manila rope of domestic origin is offered at 5.50 cents and even at 5.25 cents and is meeting few buyers. Old bagging is in slack demand and quotations are unsettled. Paper mills are filling their requirements at about 1.25 cents per pound at dealers' shipping points for No. 1 scrap bagging, and a cent per pound for roofing bagging.

PULP AND PAPER CENSUS — 1922

The Canadian Pulp and Paper Association has issued the following summary of the preliminary report on the Pulp and Paper Industry in 1922 just published by the Dominion Bureau of Statistics.

Number of Mills Operating

There were 104 mills in operation during 1922, an increase of 4 mills over the preceding year and the total net value of the production of these mills was given at $155,785,388. While the value of production is not as high as in 1920, the quantity of pulp and paper actually produced was much greater, the drop in value being caused by the low prices which prevailed in 1922 compared with those current in 1920.

Capital Investment

The amount of capital invested in the industry increased from $379,812,751 in 1921 to $381,006,324 in 1922, divided among the provinces as follows: British Columbia $32,763,965; New Brunswick $16,310,952; Nova Scotia $6,667,234; Ontario $133,749,364; Quebec $191,514,809.

Number of Employees

The number of employees in the pulp and paper industry in 1922 was 25,830 which includes salaried officers, technical experts, clerical staff and mill employees. Of this number 12,549 were employed in the province of Quebec; 8,136 in Ontario; 2,250 in British Columbia; 1,212 in New Brunswick and 503 in Nova Scotia. The total payroll amounted to $32,918,955 which is somewhat lower than the total for 1921 when the number of employees was 24,611.

Consumption of Pulpwood

The total cut of pulpwood in 1922 was 3,923,940 cords valued at $50,735,361 compared with a total of 3,273,131 cords in 1921. Of the total cut in 1922 the Canadian mills consumed 2,912,608 cords in the manufacture of pulp and paper and 1,011,332 cords were exported in the raw state to the United States. More than 50 per cent. of the exports of pulpwood was supplied by the Province of Quebec.

Production of Pulp and Paper

The total production of wood-pulp and paper in tons and value is shown in the following table:

Wood Pulp

	Tons
Mechanical	1,241,185
Sulphite Blchd.	146,690
Sulphite Unblchd.	532,188
Sulphate	217,862
Other Pulp	12,326
Total value	$84,947,598

Paper

Newsprint	1,081,364
Book & Writing	64,808
Wrapping	81,793
Boards	113,200
Other Paper	25,650
Total Value	$106,260,078

Exports

The total quantity of wood pulp exported in 1922 amounted to 818,247 tons, of which 610,314 tons was sent to the United States; 137,211 tons to the United Kingdom; 3,957 tons to France; 22,349 tons to Japan and 44,426 tons to various other countries.

Exports of paper were valued at $74,825,893 of which shipments to the United States amounted to $65,000,332. The principal items under this heading were newsprint 959,514 tons, wrapping 18,609 tons; waste paper 14,530 tons; book paper 1,584 tons, bond paper 611 tons; hanging paper 1,565,083 rolls, boards, value only $2,328,829.

THE EXPORTERS' ENCYCLOPAEDIA

The publishers of this volume, The Exporters' Encylopaedia Corporation, 280 Broadway, New York, are offering the remainder of their edition for 1923 at half price in order to introduce the work to new subscribers to their publication and service. This brings the cost of the book with bulletin and the opportunity for asking questions down to $7.50. This offer looks like a very good buy for any concerns interested in export trade.

The following description of the service of this corporation consists of

(1) The Exporters' Encyclopaedia itself which is divided into two sections. Section One contains condensed complete authoritative information on every angle of exporting.

Section Two contains specific information telling how to ship to every country on the globe; all routes from the United States; frequency of sailings; necessary forms of dock receipts, number of bills of lading, parcel receipts, etc., for each individual line; ports and trade centers in each country to which through bills of lading are issued; parcel post regulations; addresses and office hours of consuls: consular regulations to be observed; and consular charges.

(2) Frequent supplements which keep this information constantly up-to-date.

(3) Unlimited service from their Information Bureau and access to our Statistical Department which export executives have found of unparalleled value in answering special problems on particular phases of foreign trade.

The publishers say that there are but 300 copies left and consequently orders will be filled in order of receipt.

Pulp and Paper Magazine
OF CANADA

A Weekly Magazine Devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades

VOL. XXI. GARDENVALE, Que., August 30th., 1923 No. 35

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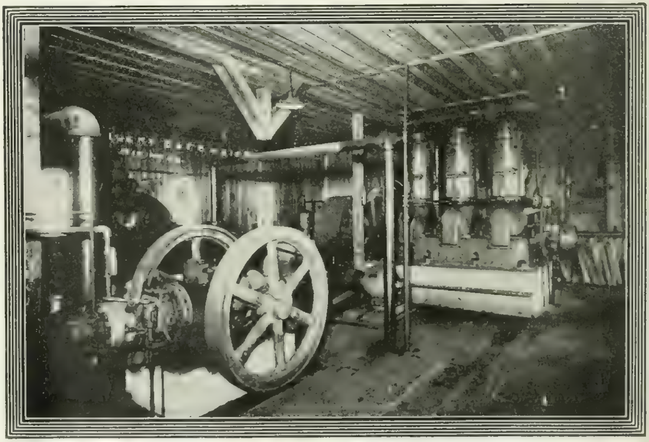

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:-: EDITORIAL :-:

EMBARGO OR FREE MARKET IN U.S. — WHICH?

Em bar go. (Em, round, about; Bar, to obstruct or prevent; Go, to move.) It will be seen from this analysis of the word that embargo means to place an obstruction round something in order to prevent its being moved. This may not be expert philology, but it tells us pretty definitely what an embargo is, and it likewise tells what the embargo will do with regard to pulpwood which is now being stripped from Canadian lands, and shipped as rapidly as carriage can be provided to the mills of the United States. This wood is being used in mills which are direct competitors of Canadian mills and it provides little or no revenue to our Canadian Governments and practically no employment to Canadian labor or freight for railroads. It is all right to love your enemy, and on occasion to give him a meal or even a car load of coal, a few tons of pulp or a few rolls of newsprint, but it is quite another thing to furnish him with practically all his raw materials for running his mill and then getting a bucket of ice water for your pains.

That is the situation which Canada occupies in relation to the United States pulp and paper industry. At the present time, the American mills are consuming somewhat less than 6,000,000 cords of wood per year, and at the present rate of export of wood from Canadian timber limits which amounts to 2,000,000 cords per year, it will be seen that Canada is furnishing more than one-third of the raw material used in their whole pulp producing outfit.

But this is not all.

Every stick of this wood, which is sorely needed by Canadan mills themselves in the face of the rapidly diminishing supply, is being converted into a product sold in direct competition with our own mlls. We said "competition" but that is not correct. **Our mills are not allowed to compete** in the United States, with the concerns using this wood which Canada is furnishing them. A duty of from 25 to 35 per cent on all grades of paper, other than newsprint, completely shuts us out of their market for book and fine papers, for kraft and other wrappings, for board, tissues, blottings, and so on down the list. This is a ridiculous situation and has become intolerable. The leading article in this issue shows conclusively the present position of Canada's wrapping paper industry in relation to the American market. It shows that Canadian wrapping paper doesn't figure at all in the American market whereas paper from European countries where labor conditions are nowhere near on the level with the status maintained in Canada and the United States, can send their products of cheap labor and poor working conditions into the United States while Canada is penalized for maintaining a high standard the same is true of other grades.

If the American mills want Canada to keep the bars down on pulpwood, let them take the bars down on paper.

The Government has appointed a Commission to investigate the pulpwood situation with regard to supply and the need for restricting the export of this raw material. They can bring in but one answer, namely, that too much pulpwood is going out of the country, and the export should be stopped. But the Lord only knows when they will bring in that answer. In the meantime, it is the duty of the Government to make it perfectly plain to United States competitors of Canadian mills that if they want Canadian pulpwood, they must grant a free market for the sale of Canadian-made paper in competition with paper made from Canadian grown wood. And the Government needn't wait for the report of the pulpwood Commission for making this situation known.

TO GET KNOWLEDGE, SIT STILL

In the course of an excellent address on the many good effects on body, mind and spirit of the practice of keeping quiet, a statement was made which has peculiar significance just now when thoughts are turned towards the class room and textbook. It was, "The secret of acquiring knowledge is to sit still."

This statement is absolutely right. Skill is, and must be, developed by active practice in the use of eye and hand, but knowledge is a matter of the mind, and the mind works best in quietness. One may, by study, know how to swim or to operate a machine, but the ability actually to do so, comes only with the actual attempt. Skill comes with doing it repeatedly. But knowledge comes by hearing, reading and thinking.

A number of men, young and older, are planning to take up or continue their study of subjects connected with the Manufacture of Pulp and Paper. These men realize, or will soon realize, the fundamental necessity of elementary mathematics and science. Mathematics is particularly important, and is the subject generally slighted by the boy in the public schools. Those who have any influence with boys at this stage should impress them with the advantage of a knowledge of figures. The disadvantage of lacking it is shown in the fact that the majority of men who enroll for correspondence courses feel that they should start at the beginning. It is obvious, too, in spite of a few remarkable exceptions, that success requires a knowledge of one's language and the ability to write it.

There are several channels through which knowledge is obtained. Almost everybody begins with the public school, but some drop out from choice or necessity before the course is completed. Facilities for correspondence instruction are available whereby such persons may continue the elementary studies, and take up special lines. The Institute of Industrial & Domestic Arts has already enrolled more than 360 students. The most carefully prepared and comprehensive textbooks have been made available through the generous contributions of the Canadian Pulp and Paper Association. and Associations and concerns in the United States interested in the Pulp and Paper Industry. The course is carefully planned and efficiently conducted, but its value to the student depends upon his sitting still and studying his job through the lessons prepared.

In the last issue of this magazine was printed a description of another institution which offers a course of study in Pulp and Paper Making. Professor Libby who has charge of these courses at the New York State College of Forestry at Syracuse, was associated with the editor some years ago at the University of Maine, where the first University course in Pulp and Paper Making was given. Professor Libby is most capable of conducting such a course as is outlined in his article. This course, it will be seen, offers the student an opportunity to become skilful in laboratory methods of testing and analysis, and of acquiring a knowledge of scientific subjects connected with pulp and paper manufacture as well as the principles underlying this industry. Here again, the success of the student, and the satisfaction he gets from his course, will depend upon his ability to keep quiet and absorb by ear and eye, and assimilate by thinking, the information that is made available to him.

Again we say, with Dr. Ritchie, the person who wishes to acquire knowledge must learn to sit still and think.

DO SETTLERS SETTLE?

The recent report of the Dominion Bureau of Statistics shows that in Nova Scotia the farm acreage has decreased from 5,080,901 acres in 1901, and 5,260,455 acres in 1911, to 4,723,550 acres in 1921. During this time, there has been some increase in the value of farm property. We have heard a good deal about the necessity for the clearing of land in order to accommodate settlements and farming. The statement of the Bureau of Statistics seems to show that further clearing of land for this purpose is apparently unnecessary. It would seem from reports that we have heard of conditions in Nova Scotia that a very large amount of land has been cleared by forest fires in addition to that which has been cleared by farmers and settlers. It would appear, therefore, that not only has a lot of land been unnecessarily cleared but much land which has been under cultivation has since been abandoned. We do not know of any part of Canada where such intensive cultivation is being practised as to warrant the decrease in cultivated area. It is probable that the destruction of the forest has killed industries that formerly supported the farmer.

We noticed in a daily paper recently, a letter from a person in Graceville, Quebec, who states that a large percentage of farmers would not be able to make ends meet except for the supplementary income that they get from clearing their land of pulpwood. This is quite a different proposition from cutting off the wood from sufficient ground to begin planting or to clear enough land so that the pulpwood will bring in sufficient to tide the settler over the first season or two. The statement appears to us to be an admission that the person who cannot make ends meet by farming is not on a farm, or that he is not a farmer. It may be that through an error of his own, or an error of the Department of Colonization, he has settled on land which is not suitable for agriculture or it may be that he has purposely settled on land which contains good timber merely for the purpose of clearing it off and selling it for pulpwood. If the latter is the case, or if his ground will not grow crops anyway, it is just a question of a few years when he will have to pull up stakes and repeat the settling process somewhere else.

It does not appear from either of these cases, which perhaps may not be either of them restricted to the provinces mentioned, that some sections of our country are being properly or permanently settled.

COBWEBS

A newspaper headline says: "42,000 suckers killed by Government." This refers to the destruction of undesirable fish. But we have heard the name applied to people who lack the merest vestige of common sense in regard to investing hard earned cash. This kind of poor fish is destroyed by the financial shark.

Pulpwood is being shipped from Newfoundland by vessel to Sorel, opposite Three Rivers and trans-shipped by rail to pulp mills in the United States. Newfoundland prohibits the export of pulpwood except from one or two places where special concessions have been obtained.

?

Great occasions do not make heroes or cowards; they simply unveil them. Silently day by day, we grow strong or weak and at last some crisis shows what we have become.—Canon Westcott.

Chemical Pulp And Wrapping Paper

By M. C. H. in Commerce Monthly

In the following article, which appeared in the September issue of the monthly magazine of the National Bank of Commerce in New York, the author, by omission, intimates that Canada is not an important competitor in the U. S. market with domestic wrapping paper mills. This is due, of course, to the fact that Canadian mills maintain the same standard of wages and working conditions in the face of which there is a prohibitive tariff. The answer to this is, that the United States must make generous tariff concessions on Canadian papers before the with holding of an embargo on pulpwood is to be considered. —Ed.

* * *

Paper is in world-wide use as a commercial wrapping. Its pre-eminence as a wrapping material has been due to its strength, folding quality and lightness of weight. Abundant supplies of wood-pulp have had their effect also. It is estimated that one-seventh of all paper manufactured is used for wrapping purposes and paper of this grade serves as a material for the manufacture of many other articles. Thus, among recent innovations made from wrapping paper are paper yarn, twine, cording for paper furniture, clothing, player-piano rolls, pails, bottles and barrels.

Chemical pulp, because of its strong unbroken fibers, is the chief raw material used in the manufacture of wrapping paper. By far the greater part of wrapping paper is made from chemically prepared wood-pulp, while about one-third of the United States consumption of chemical pulp is used in the production of wrapping paper.

There are three processes by which chemical pulp is prepared, namely, the sulphite, the sulphate and the soda. The largest amount of chemical pulp is produced by the sulphite process, in which the wood is cooked under pressure from 8 to 10 hours or longer with a solution of bisulphite of lime. In the slow-cook process the wood is cooked from 20 to 30 hours. Pulp made by the sulphate process, intentionally undercooked, produces a strong stock known as kraft pulp. This process has helped to conserve the diminishing supply of spruce as it is possible to utilize other coniferous woods such as jack pine and tamarack. Scandinavian mills largely employ the sulphate process in the manufacture of their kraft brown wrappings which are renowned for strength and finish. The soda process is used principally in the manufacture of pulp for book paper.

The United States is the largest producer of chemical pulp in the world, but its production is not sufficient to meet its requirements. The production in 1922 amounted to 2,038,000 tons. Practically the whole of this amount was consumed in the United States, and was supplemented by about 932,000 tons imported from Canada, the Scandinavian countries and Germany. Table A shows the production of chemical pulp in the United States in comparison with the total production of all grades of wood-pulp for the years 1914, and from 1918 to 1922 inclusive.

Canada ranks after the United States and Sweden as a producer of chemical pulp, with an output of 284,000 tons in 1913. Twenty per cent. of this amount was exported, chiefly to the United States, Japan, United Kingdom and China. The remainder was manufactured into paper by the local mills. By 1922, production of chemical pulp had increased to 690,000 tons, and Canada is regarded as the main source of the world's future supply.

During the war period, Canadian exports of chemical pulp to the United States were stimulated by the exclusion from the American markets of the larger part of Scandinavian products, through lack of shipping, and its being placed elsewhere. Since the war, although imports from Europe have grown to large proportions, Canada has retained its position as the leading foreign source of American imports of chemical pulp. Imports from Canada in 1922 were more than seven times the volume of the prewar period.

Table A — Pulp Production of the United States

Year	Chemical	All grades	Chemical per cent. of all grades
	(in thousands of short tons)		
1914	1,599	2,893	55
1918	1,896	3,212	59
1919	1,925	3,385	57
1920	2,222	3,808	58
1921	1,526	2,801	54
1922	2,038	3,522	58

The European chemical pulp-producing countries include Sweden, Norway, Germany, Czechoslovakia and Finland. Sweden is the most important and that country ordinarily produces more than one-half of the chemical pulp entering international commerce. The bulk of Swedish exports goes to England, Germany, the United States and France. Its maximum output, 1,109,000 tons, was reached in 1922. Labor troubles in the early months of the present year have caused reduction in current output. The absence of Sweden's contribution to international trade has been felt by the United States and other countries which ordinarily rely on that country for pulp. The labor difficulties have now been adjusted, but it will be some time before the former rate of production and normal activity in the market are again reached.

Production of chemical pulp in Norway during 1922 amounted to 212,000 tons. However exports during that year, due to the carryover from the previous year, amounted to 226,000 tons. Finland has increased steadily in importance as a source of American supplies of chemical pulp, and that country promises to be a permanent source of supply for the American paper mills. Over twice as much chemical pulp was exported from Finland in 1922 as in 1913. In 1913, Germany produced 940,000 tons of chemical pulp and exported one-fifth of the output. During the war, production declined and their exports ceased. However, in 1922 more than 80,000 tons were exported. Germany is increasingly dependent upon foreign wood.

Exports of chemical pulp from the principal producing countries for the years 1913 and 1918 to 1922 are shown in Table B.

Table B — Exports of Chemical Pulp from Principal Producing Countries

	1913	1918	1919	1920	1921	1922
	(in thousands of short tons)					
Sweden	723	512	750	790	466	986
Norway	232	187	147	232	98	226
Germany	198	*	*	38	†38	81
Finland	85	42	81	102	140	203
Canada‡	56	269	417	430	454	355

*Not available.

†May to December, inclusive.

‡Figures for fiscal year ending March 31.

Facing Pulpwood Shortage

The possibility of the exhaustion of accessible supplies of pulp wood is a question frequently in the minds of pulp and paper manufacturers. During recent years and even before the war the matter was brought into special prominence as a result of the increasing cost of pulp. This is due in large measure to the gradual exhaustion of the more accessible and therefore cheaper supplies of pulp wood. The demand for wood-pulp is increasing, not only for paper making but for the manufacture of a large variety of widely different materials and articles such as artificial silk, wallboard, shipping containers and utensils for dairy products.

The United States has, in times past, imported considerable quantities of pulp wood from Canada. However, there is at present an embargo on exports of pulp wood from Canadian crown lands (covering about 85 per cent. of the forest area), while recent legislation empowers the Government to prohibit all export of pulp wood. To meet the situation caused by the depletion of domestic pulp wood timber as well as Canadian embargo, the paper and pulp companies of the United States are conducting a campaign for Federal and state forestry legislation to encourage timberland owners to reforest their cutover lands so as to create a continuous supply, but so far have received small encouragement. Under present conditions the United States faces a pulp wood shortage for a half century. With a decreasing supply of pulp wood in the United States and an increasing demand for paper, this country is the leading importer of pulp. Imports of chemical pulp for 1922 were three times as great as average imports for the prewar 1910-14 period. The United States depends on Canada as its principal foreign source of supply of chemical pulp, while Sweden also furnishes a substantial amount. Data for imports for the five-year period 1910-14 and from 1918 to 1922 are shown in Table C.

Wrapping Paper a Business Barometer

The physical volume of retail trade is to a certain extent reflected in the consumption of wrapping paper. During the period of depression the wrapping paper industry suffered in volume of sales but with the recovery of general business, American manufacturers of wrapping paper were equipped to meet the increased demands on the industry. Prewar production (1914), including bag paper, was 882,000 tons. By 1920 it had increased to 1,044,000 tons; in 1921 it dropped to 782,000, and rose again to 1,048,000 tons in 1922.

Table C — Imports of Chemical Pulp into the United States by Countries of Origin

Country	1910-14 (5 yr. aver.)	1918	1919	1920	1921	1922
	(in thousands of short tons)					
Canada	55	344	284	408	237	406
Sweden	101	1	76	133	137	361
Norway	79	5	11	20	15	77
Finland	*3	..	14	27	38	57
Germany . . .	76	..	..	8	18	22
Other countries	15	1	2	5	7	9
Total	329	351	387	601	452	932

* Four-year average, 1911-14.

Table D shows production and stocks of wrapping paper for each month from January, 1920 through April, 1923. Bag paper has been included with wrapping since the greater part is usually manufactured from chemical wood-pulp in wrapping paper mills although a small percentage of the bag paper included may be manufactured from other kinds of material. Since reaching its low point in the early part of 1921, the wrapping-paper business has continued to improve. The market is fairly steady and conditions appear favorable for a continued satisfactory volume of business.

Manufacturers of paper in this country are now producing nearly all of the grades of wrappings made abroad prior to the war. There is an increasing demand on the part of merchants for domestic papers on account of less delay in delivery and uniformity of quality.

An interesting branch of the wrapping industry as well as an important and rapidly growing one is the manufacture of vegetable parchment, greaseproof and glassine papers. Many years of strenuous effort on the part of the manufacturers have established these useful papers in the United States. Vegetable parchment, a chemical product made chiefly of cotton cellulose combined with a small percentage of bleached sulphite, is a valuable food product wrapper. It is used for wrapping products to retain moisture, flavor and odor. Domestic mills are equipped to supply an increase in demand. Glassine paper is composed of sulphite pulp. Its transparency and its greaseproof qualities are effected by special beating and super calendering, and it makes a hygienic and attractive paper for food products or for packages where both protection and transparency are necessary. Prior to the war there was only one or two manufacturers of glassine in this country. Today there are eight or more with a production of about 100 tons daily.

The United States, in normal times, has been a net importer of wrappings, the greater part of which is supplied by the Scandinavian countries. During the war period imports declined and even as late as 1921 only one third as much wrapping paper was imported as in 1914. Exports were stimulated by the reduction in available European supplies, and from 1916 through 1920 gross exports averaged well over 30,000 tons a year. During 1922, however, imports of wrappings increased 450 per cent. and exceeded exports by 15,000 tons. This marked gain between 1921 and 1922 is an indication of the efforts being made by foreign countries to invade American markets with their products.

Table D — Production and Stocks of Wrapping Paper (Including Bag Paper)

Month	1920		1921		1922		1923	
	Production	Stocks on hand end of month	Production	Stocks on hand end of month	Production	Stocks on hand end of month	Production	Stocks on hand end of month
	(in thousands of tons)							
January	91	28	51	49	83	58	96	52
February	79	35	54	55	77	63	90	52
March	87	33	59	61	89	69	*87	*43
April	95	35	60	62	79	72	91	46
May	90	29	60	63	89	74	96	46
June	93	24	57	64	85	75	..	..
July	93	24	52	65	83	73	..	..
August	95	26	67	66	93	66	..	..
September	90	22	73	59	90	58	..	..
October	90	23	84	56	94	52	..	..
November	79	28	85	54	97	49	..	..
December	61	39	82	52	91	68	..	..

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* Bag paper excluded. Not available for the month.

Gross exports of wrapping-paper from the United States are not commensurate with production, which in 1922 amounted to 1,048,000 tons. Exports for the same period were less than 2 per cent. of production. In order to safeguard the industry the ratio of exports to production should be much higher, for with the increase of production brought about by the war due to foreign demand as well as heavy demand at home, it has been questioned whether the domestic market in the future will be sufficient to absorb the production. Broader export markets would be serviceable as a means of stabilizing the industry, particularly in periods of low domestic activity. In the face of renewed competition from Europe, the postwar years show a fair gain over prewar exports. Exports for 1921 were almost twice the amount of exports in 1914 while 1922 shows a 40 per cent. increase over 1921. Table E shows trade of the United States in wrapping-paper for the years 1914 through 1922.

The Latin American countries are logically the best customers for paper and paper products exported from the United States. However, with the exception of Cuba, the market has not been developed extensively. The proximity of those countries to the United States is an important factor in further developing the demand for American paper.

Table E — Trade of the United States in Wrapping

1914	18	7	*11
1915	15	12	* 3
1916	7	32	25
1917	4	32	28
1918	4	30	26
1919	2	37	35
1920	2	31	29
1921	6	13	7
1922	33	17	*16

* Net imports

Glassine and greaseproof papers are used extensively in the Latin American countries. Here rests one of the many opportunities for the American manufacturers to develop a profitable trade with these countries. Competition is keen with the Scandinavian countries and Germany from the standpoint of price but when quality and service are given due consideration, the United States manufacturers have a reasonable basis for competition.

European countries have an advantage over the United States in so far as the price of wrapping-paper is concerned. The cheap labor which is predominant in most of the manufacturing countries of Europe enables the manufacturers to deliver paper into international markets at low prices in comparison with cost of production and distribution in this country. On the other hand, the United States offers wrapping-paper of a quality unsurpassed by any other producing country at a price commensurate with the quality.

In comparison with the volume of exports of the Scandinavian countries and Germany, the world's leading exporters of wrapping-paper, the United States exports are negligible.

Table F shows gross exports of wrapping paper from the Scandinavian countries and Germany for the years 1913 and 1918 to 1922 inclusive. Imports into these countries are negligible and have been omitted from the table.

Table F — Gross Exports of Wrapping Paper from Principal Exporting Countries

Country	1913	1918	1919	1920	1921	1922
		(in thousands of short tons)				
Sweden	109	82	61	141	64	131
Germany	94	*	*	68	†32	79
Norway	91	49	41	54	24	75
Finland	73	4	9	30	19	34

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* Not available.

† May to December inclusive.

Sweden alone exported approximately fifteen times as much wrapping-paper in 1913 as did this country. Germany and Norway exported about thirteen times as much. This difference in the export development in the United States and these European countries is due to the fact that mills in this country have been developed almost entirely with the idea of supplying principally the domestic market while the mills of Scandinavia and Germany have generally been developed with the idea of supplying foreign paper markets. It is also true that manufacturers in this country do not like the terms of purchase and of payment offered in many foreign countries. The bulk of Scandinavian and German exports go to adjacent markets in other European countries. Substantial quantities are, however, marketed widely in all parts of the world.

THE MANUFACTURE AND COLOURING OF BOX BOARD

By ARTHUR T. BRAINERD *

Paper board is a product made up of several layers or sheets of various kinds of paper stock, from which are made so-called solid fibre containers. Corrugated shipping cases are usually made of corrugated strawboard with a paper board liner. The term liner as concerns a box board designates the outside or face of the board and consequently the liner is usually specially treated, coloured and waterproofed. Paper board, as such, is the modernized machine made pasteboard of former years, but only with the advent of the multiple cylinder machine did the product assume any large degree of usefulness. To-day container board is used in the manufacture of boxes of every description for shipping practically every article of commerce.

Advantages of Box Board

The advantages of box board as container material are many. Standard sizes are made to order in large quantities by the box makers and shipped flat to the customer. It is then possible for large shippers to buy in quantities, ready made boxes in correct sizes without the necessity of having enormous storage space. Much time is saved in shipping merchandise as box-making is eliminated. Smaller packages can be used as units, facilitating handling and giving opportunity for taking advantage of parcel post rates when desirable. Advertising matter can be attractively printed on paper boxes and thus a valuable medium procured at practically no extra cost. This is a factor of considerable importance with manufacturers of nationally advertised goods having country-wide distribution.

The saving in weight of shipments is also of much importance. At a lecture on box board manufacture which the writer recently attended this point was brought out in an interesting manner. It was stated that a specially made fibre board box for shipping a typewriter weighed only five pounds. The usual wooden container weighs twenty-five pounds. As typewriters are usually shipped by express this difference in weight represents a saving of two to three dollars in transportation charges on each machine in a transcontinental shipment.

United States Government statistics show that by September 1920, the average production and sale of paper board has reached the total of 9,000 tons per day, or at the rate of 300,000,000 tons a year. The manufacture of paper board is now the largest branch of the paper industry, more than one-third of the capital invested, tonnage produced and value of product sold being credited to this branch of the industry.

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* Of H. A. Metz & Co., Chicago. From the American Dyestuff Reporter.

An old lady who had been all her life crabbed and sour suddenly became the opposite. Asked the reason, she replied, "I have been all my life striving for a contented mind, and finally concluded to sit down contented without it." She made the mistake of trying to be happy.

PAPER CONSUMPTION A MEASURE OF CULTURE

Sir Frederick E. R. Becker, who is associated with many of the big paper firms of Great Britain, and interested in pulp and paper mills at Chicoutimi and other points in the province of Quebec said to the Gazette at Montreal.

"The world position of pulp and paper is a very interesting phenomenon."

"The United States of America are said to consume 2,500,000 tons of news and printing paper per annum. This consumption, according to official reports, is increasing at the rate of nearly eight per cent. annually. This means that each year an additional 200,000 tons of paper have to be supplied to the reading public of the United States, and a very considerable proportion of this supply comes from Canada."

A nation's consumption of paper, said Sir Frederick Becker, was said to be the measure of its culture. On this basis the people of the United States certainly led the world, with a gross consumption of fifty pounds of news and print paper per capita per annum.

At this rate, said Sir Frederick, the increased production in Canada, great as it was, would soon be used up.

"Everyone in Canada," said Sir Frederick, "knows from personal experience that they want and buy several times more newspapers, magazines and books today than they did twenty years ago. This same rule applies to South America and many other countries. It only wants the East to take to literature as they have to tobacco to raise a point of increase in the consumption of paper that will be hard to cope with."

With regard to these conditions Sir Frederick said that a restoration of trade conditions in Eastern Europe would immediately withdraw from North and South America such unnatural pulp and paper supplies as those of Germany, Czecho-Slovakia and Austria. In addition to this a Russia only tending toward normality would restore to Finland its natural export market.

"Hence," said Sir Frederick, "the huge growth in the consumption of paper for the near future must depend on the Canadian forests. In this respect I am always worried to see the meagre forest protection forces squandering their energies on the doubtful German theories of reafforestation. Protection against fire, and making the starting of a forest fire a criminal offence, condemned by law as well as by public opinion, seems to me to demand every cent that can be raised and every effort that can be made."

Sir Frederick said he thought the Chief Forester of Quebec had some time ago stated that for every tree felled by the axe nineteen were destroyed by fire. If this were still true he considered it a crime and a shame.

Use of Waste Product

As a recourse Sir Frederick Becker mentioned a recent invention by a French scientist, M. de Vain, for the manufacture of bleached straw pulp into writing and print paper by a process that made a considerable percentage possible. Canadian straw, he said, was largely burnt, but if this process eventuated it would prove a source of considerable secondary profit to the Canadian grain growers.

In this connection Sir Frederick Becker said he hoped to be able to get one or two mills under way in Canada. There was always, he remarked, a deep attraction in utilizing a waste product, while this process would bring a "sweetener" into many Canadian farm homes, and at the same time provide a new source of supply to the paper trade.

Planning The New Building

By PAUL M. ATKINS, Member of the Faculty of the School of Commerce and Administration, University of Chicago

In "Industrial Management"

With the present high cost of building and even higher rents, business men must consider seriously the problem which the housing of an enterprise presents. If a concern decides to build it is confronted with the fact that its decision is not for the moment only, but that whatever conclusion it arrives at will affect the future even more than the present. If more money than is desirable is spent to attain the results that are sought, the excessive capital charges will be felt as long as the company continues to do business at that place, or until the excess valuation is written off through depreciation, or by some other means. It is prudent, therefore, that the expenditure of money for building, be scrutinized with the greatest care by those who are responsible for the success of the undertaking.

One of the common misconceptions that exist in regard to the construction of a factory is that the structure which is built of the best materials, which has all the latest devices for illumination, ventilation, and sanitation, and which is equipped with the most modern fixtures must, of necessity, be the best and most satisfactory building for the business. It certainly is true that all these matters are important and that they must be considered before the structure is finally erected, but, if they are the first details that are contemplated, and if they are not predicated on the careful consideration of certain other elements, it will only be by great good luck and a happy chance that the buildings will be satisfactory in the long run to the company for whom they are being constructed.

The very first question that must be thought about when the decision to build has been reached is that of the product and its manufacture. The factory should not be considered as a mould into which the business is being poured and which must conform to the shape imposed on it by the exterior force of the structure. Many buildings are built in this manner and that is one of the reasons why manufacturing is so expensive in many instances. A factory building should be thought more like the shell on the back of the turtle, which has grown to suit the needs of the animal inside. In other words, the building should be erected to meet the requirements of the business and the business should not be cramped and cabined to conform to the shape of the building that houses it.

One of the reasons why the burden rate is so high in some factories, and in some instances why the labor cost is above what it should be, is because the layout of the building makes such results inevitable. If it is necessary to transport the work in process two or three times as far as should be necessary, the cost to produce the goods under those conditions is increased by just so much. If the location of the stockroom means that the material has to be handled an extra time, the burden is increased. If the tool cribs are located in out of the way spots where it takes the workman more time than it should to get his tools every time he changes a job, the direct labor cost goes up. And the worst of it is, the excessive expenses are not for one day or for one week, but for just as long as the company continues to do business under those conditions.

The very first matter that should be thought of, therefore, when the question of building is under consideration is that of the product and the way it is made. Since the product has been carefully analyzed before the company was started, the results of that analysis are at hand to be used at this moment. The processes themselves must be understood before the work of organizing the company was begun, and their analysis should be known, but if it is not at hand they should be analyzed without delay.

Usually, however, nothing has been done to really plan out the sequence in which those manufacturing processes are to be carried out, for down to this moment there has been no need for this. This analysis of the order of operations has importance at many different stages of the industrial development of the company, and its thorough consideration at this point, will not only enable an adequate decision to be reached in this matter, but will be of service in several other connections.

The fundamental problem that lies before the man who is planning the construction of factory buildings, is to ascertain the definite amount of space that is needed to produce a definite quantity of goods in a definite time. This necessitates the knowledge of how long various processes of manufacture will take, as well as a thorough acquaintance with the manner in which they are carried on.

The real way to design a factory building is to lay out the interior arrangements as they should be, and then to build the structure around them. This is just as sensible as it is for the railroad that is building a new terminal to plan the layout of its tracks on the ground of the proposed edifice and then construct the building to house them. The absurdity of the railroad building the terminal first and then laying out the tracks inside is perfectly obvious, and yet most industrial concerns when they build do just the same sort of absurdly unwise thing that the railroad very carefully avoids.

In some cases the interior layout will be by consecutive process, and in others, according to the kind of machine. In all cases, however, the object should be to provide that the work in process travel the shortest possible path from the raw stores room to the shipping department. Internal transportation is one of the fundamental elements that must be considered in arranging the layout. Transportation involves not only moving goods around on the floor where they happen to be, but from floor to floor as well, and the latter is frequently the more important. Hence it is well to provide for the goods to start at the top floor and move down to the lower ones in sequence, using gravity to convey them whenever possible.

In any event, the mistake made by a certain well-known manufacturer should be avoided. He built a large, well-constructed, five story factory building, and the only means for getting goods from one floor to another was one very large elevator set exactly in the middle of one side of the long narrow building. The amount of time that was lost waiting for elevator service was almost beyond belief. Yet this building. was put up by a manufacturer who wanted more room and who had experienced the lack of convenience of hired quarters; it was designed by a prominent firm of architects and erected by a well-known firm of contractors; and still this all-important detail escaped or was overlooked by all of them.

Another matter that must not be disregarded is the future growth of the buildings to accommodate the increase in business of the company. A concern cannot afford to tie up capital in buildings that it does not expect to use for a number of years. A good executive who is controlling the destinies of his concern should look ahead into the years to come, and foresee the growth of his company. It is inevitable that he will realize that more capacity will be needed, and he shows great lack of wisdom if he does not make provision for it. A small concern that started in a little old building on a small plot of land was successful. It grew and finally bought another plot of land adjacent and erected a new building thereon, but it did not take care to get all the land that it might have bought at that time. A large corporation next door proceeded to buy all the land on that side of the street and soon this little company found itself completely surrounded by its larger neighbor, and when it grew some more it was compelled to buy land across the street and dig a tunnel underground to connect the two parts of its factory.

This same lack of foresight happens in a variety of ways. Many are the concerns that build foundations of sustaining the weight of only two or three floors, and later want to add three or four more, but cannot without tearing down what they have and starting out anew. Many other concerns have built their power houses squarely in the way of the natural growth of their factory buildings when some other location might just as well have been chosen in the first place. All such questions require careful thought when building is being considered.

When these matters have been given due consideration, it is time to turn to the actual construction of the building. The expense of operation will be largely determined by the adequacy of the construction, for not only is depreciation very much larger in a poorly constructed building, but the actual cost of doing business therein is greater. Workers cannot put forth their best efforts in a place that is not comfortable. Abundant light, sufficient heat, good ventilation, adequate space, convenient toilet and wash-rooms — these are essential if the workers are to be expected to produce to the best advantage.

The various processes are greatly aided or hindered by many of these same conditions. Insufficient light results in poor inspection and inevitable subsequent trouble. Lack of adequate humidity in the case of textiles is a source of large loss in the course of a year. Flying dust will ruin the work of a varnish or paint shop.

The fire hazard is something that is receiving more and more consideration as business men are growing to realize that it is far less expensive to prevent fires than it is to pay for the damage that they do. Not only are goods destroyed but the company's business becomes disorganized and competitors get some, at least, of its trade. The modern sprinkler systems that have come into use so much of late are doing a great deal to solve this problem. Internal division walls and enclosed elevator shafts aid in lowering this hazard and should all receive consideration at this time.

It is quite impossible in this short article to more than mention some of the more important points that need to be thought about when the proposition of building is before the executives. It must be borne in mind at all times, however, that the building problem is essentially one of layout of the various processes, and, as Professor Edward D. Jones so aptly says: "The problem of layout is to discover such an arrangement as will secure the greatest convenience for the most important functions."

The task before the executive may be summed up thus. Given a certain sum of money, a definite piece of land, the necessity of providing for a predetermined output, and with future developments in mind, to provide a building that will permit the goods that are manufactured to be made at the lowest possible price.

SAFETY FLAG AT PORT ARTHUR

The prize banner awarded by the Ontario Pulp and Paper Manufacturer's Safety Association for the best accident prevention record was won in class A by the Provincial Mills at Port Arthur. They say it is nailed to the flag staff.

PAPER MAKING CHANGES HANDS

The well-known British magazine for the paper trade, entitled "Paper Making" which is now in its 42nd year, will be published hereafter by Trade Journals Limited, with address at 8 Baldwin's Garden, London, E. C. 1. The general appearance of the paper is much the same as previous issues, and the subscription price remains 5 shillings or $1.25 per year.

Reserve is power. He is wise who lives a good part of his life inside himself. Too much speech is weakness.

The British Empire Exhibition

The Share that Canada will have in this Mammoth Display of Empire Products and Resources

The following statement appears in the Commercial Intelligence Journal issued by the Department of Trade and Commerce, April, 21st, 1923.

"All the plans for Canada's participation in the British Empire Exhibition to be held in London, England, from April to October 31st next year, are practically completed. The Dominion Government will erect its own building — an imposing structure in Veo-Grec architecture — on a commanding site in Wembley Park, where the exhibition is to be held. Work on the erection of the building is to commence this summer, and every last detail linked with this great enterprise will be completed when the exhibition is opened to the public in April, 1924.

The Canadian Building

"The building will be 415 feet long and 300 feet wide, with a floor space of 124,500 square feet, and in it, through the medium of attractive displays and exhibits, visitors will have an opportunity to learn in an interesting and impressive way something of the extensive natural resources of Canada, the products of the soil, and the wide range of manufactured articles made within the Dominion. The resources and products of each of the nine Provinces and the two Territories will be displayed. The Canadian exhibit is to be financed, controlled, and directed by the Federal Government. The estimated cost is $1,000,000.

"On the same site as the Canadian Government building will be two additional separate buildings built by the Canadian National railways and the Canadian Pacific Railway, each with a floor space of approximately 10,000 feet. In these buildings Canada's two great transportation organizations will show the attractions and resources of the country served by their respective railway lines. Plans for all three buildings have been approved by both the Dominion Government and the official architects for the exhibition.

Attendance

Owing to the location of the Exhibition, to the ample period given for preparation, and to the advertising it has received, it is expected that the attendance will surpass all previous records, not only from the British Empire, but also from foreign countries. It is estimated that millions of people will attend including not only great numbers of British citizens and merchants, but also a representative number of visitors and merchants from many other countries.

Management

The management of the Canadian section of the Exhibition will be entirely in the hands of the Canadian Government operating through the Canadian Government Exhibition Commission, which has already made preliminary arrangements.

The Canadian Manufacturers' Association has taken a deep interest in this Exhibition and believes that it will provide a wonderful opportunity for the display of Canadian products in friendly competition with the products of other countries of the Empire, and that, therefore, no effort should be spared to insure that Canada's part will be creditably performed. It would be difficult to conceive of any single event that could have such great publicity value by reason of the attendance of an observant and intelligent population, or that could have so vitalizing an effect on Imperial trade as this great Exhibition, presenting as it will in graphic and striking form the produce and manufactured commodities of the Empire and reaching as it will not only domestic buyers in England and visiting merchants from other countries, but also the principals and buyers of the great export shipping houses of London which have been probably the greatest single factor in the development of Imperial export trade. The future of Canada's export trade will be greatly influenced by the variety and quality of Canadian exhibits.

The Canadian Pulp and Paper Association has engaged a full section of Show case space and has accepted the services of the editor of the Pulp and Paper Magazine to organize an exhibit representative of the whole Canadian industry. A bulletin giving particulars is being distributed and may be had on application.

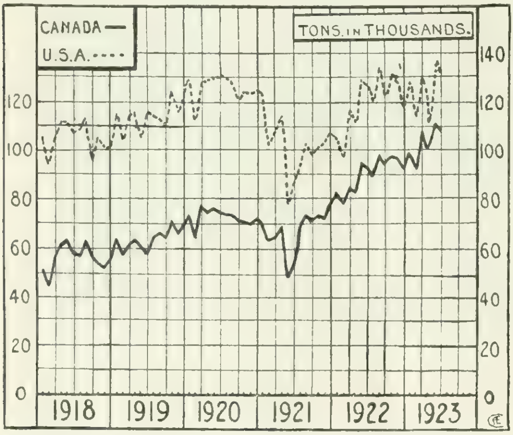
The natural resources of the Dominion will be shown in the Canadian Pavilion in conjunction with industrial section.

NEWSPRINT PRODUCTION IN JUNE SLIGHTLY LOWER THAN MAY

The production of newsprint by Canadian mills in June was 108,832 tons; U. S. mills produced 133,692 tons in the same month.

In both cases the total production was less than in the previous months, when new high records were established; the decrease, however, is chiefly accounted for by the shorter working month.

The accompanying chart, prepared by the Canadian Pulp and Paper Association, shows the production in Canada and the United States monthly from the beginning of 1918:



The total production for the first six months of the year is given below (Canadian figures revised up to date):—

	Canada	U.S.A.	Total (tons)
6 Months, 1923 . . .	621,897	760,636	1,382,533
" 1922 . . .	516,506	690,142	1,206,648
" 1921 . . .	373,988	615,448	989,436
" 1920 . . .	443,512	759,624	1,203,136

Canadian production for this year shows an increase of 40 per cent. over 1922; while the U. S. production increased 12 per cent. over last year.

U. S. Wood Pulp Output Increased 21.8 Per Cent

The U. S. Department of Commerce announces that the total consumption of pulp wood was 5,548,842 cords by 241 mills in 1922, as against 4,557,179 cords by 254 mills in 1921. The consumption of wood in 1923 increased 21.8 per cent., compared with the previous year, but decreased 9.2 per cent. compared with the consumption for 1920, which year was the most active in the industry.

More than 54 per cent. of the wood consumed in 1922 was spruce. Hemlock and yellow pine were next in importance, supplying 16.1 per cent. and 6.7 per cent., respectively, of the total quantity of pulp wood used in the year.

The production of wood pulp was 3,521,644 short tons in 1922, compared with 2,875,601 tons in 1921. Of the total amount in 1922, 1,483,787 tons were produced by the mechanical process, 1,374,319 tons by the sulphite process, 419,857 tons by the soda process, and 243,681 tons by the sulphate process.

Maine, Wisconsin and New York are the leading states in this industry. In 1922 these three states exported 56.8 per cent. of the total consumption of pulp wood and 59.7 per cent. of the total production of wood pulp.

BOOK REVIEW

THE PRODUCTION AND USE OF PRINTING PAPER: A Manuel for Papermakers and Printers. By Willy Grunewald, Berlin: Carl Hofmann. Price $2.00.

We have received a copy of a book entitled "Herstellung and Verarbeitung von Druckpapieren," whose author is the technical editor of the Papier-Zeitung. It is issued by the well-known house of Hofmann, Berlin, and is printed on a super-calendered white wood cellulose printing of excellent quality; the matter and illustrations are both good examples of the art. It is bound in a greenish blue paper board, with a cloth back, and contains 158 pages, including a full index, and a fairly comprehensive bibliography of the German literature of the subjects is added.

The author states that this work is the outcome of a lecture which he gave to the Berlin Typographical Society, on "The Making and Using of Paper," particularly with reference to offset printing. Many of his hearers wished a fuller treatment of the subjects and the book before us is the result.

The author expresses a hope that he has succeeded in telling the papermaker what the printer must demand and the printer what the papermaker can accomplish. A perusal of these chapters will convince the reader that he has fulfilled his desire with much success.

The book commences with a short historical introduction to the manufacture of paper, and to the invention of printing and the press. Modern paper-making is then dealt with concisely, occasionally directing the reader's attention to the bearing of the process of manufacture on the printing quality of the product.

The preparation of the printing ink is suitably treated; then the machines used by printers are described, along with the various classes of printing, as from type, engraved plates, stone, gelatine, etc., followed by a careful description of the actual working of these different processes, with all the time a steady eye on the peculiarities of the paper and ink to be used. We have had inquiries for just the sort of information contained in this chapter. A very good chapter on paper testing is included.

This is a handy little volume which should prove useful to those engaged in both industries. It is well illustrated throughout. The diagrammatic illustrations of paper and pulpmaking are particularly useful to the uninitiated. One fine example of three-color work is given, and there are further colored pages to illustrate the use of various colored inks.

Western Chemical Industries

(Prepared under the Direction of Dr. Charles Camsell,
Deputy Minister of Mines, by Dr. A. W. G. Wilson,
Chief Engineer, Mineral Resources Division.)

The Prairie Provinces of Canada are classed primarily as agricultural areas and up to the present time they have not been considered seriously as probable contributors to the mineral wealth of the country. Recently, however, the resources of these provinces in nonmetallic minerals, such as clays, coals, oil, gas, and the sodium and magnesium salts, which occur in the numerous alkali lakes and sloughs throughout the area, have been attracting the attention of capital with the result that considerable activity is evidenced in all these lines.

The increased interest in the alkali deposits of Western Canada has induced the Mines Branch of the Department of Mines, Ottawa, to institute a detailed investigation of these deposits with a view to determining their possible economic value and the extent of reserves. The work has now been in progress under the direction of Mr. L. H. Cole during the last two field seasons.

Natural occurrences of soluble mineral salts are known in the provinces of Manitoba, Saskatchewan, Alberta, and British Columbia, either in the form of bedded deposits or as brines. Some are of considerable extent and are probably of sufficient size to warrant commercial exploitation, provided economical methods of recovery can be developed and sufficient markets can be established.

Three of these deposits are being operated or will shortly be operated in the Prairie Provinces and plans are under way for the development and operation of a fourth deposit.

At Dana, Saskatchewan, a half million dollar plant is nearing completion, to extract salt cake and other chemical products from the brines of Muskiki lake, formerly Houghton lake, 23 miles west of Humboldt, Sask. The company operating this deposit is The Salts and Chemicals, Ltd., controlled by Canadian and United States interests. The main plant of this company is at the deposit at the lake and they have a refining plant at Kitchener, Ontario. When this plant is in operation it is estimated that the output will be 30,000 tons of salt cake per year besides Epsom and other salts recovered as by-products. A small village has been erected at the lake with housing accommodation for 60 men. When the plant is working at fuller capacity 100 men are to be employed.

Sodium Sulphate Plant

At Frederick lake, five miles southwest of Dunkirk, Sask., and 38 miles from Moose Jaw, Sask., another salt cake recovery plant has been erected by The Bishopric and Lent Co. with head offices at Cincinnati, Ohio. This plant is practically completed with a capacity of fifty tons of salt cake per day, and as soon as it proves commercially successful, further units are to be added to increase the output to 200 per day. At the present time, twenty men are employed at this plant.

At a lake five miles north of Fusilier, Saskatchewan, an experimental plant has been operated by a company called Soda Deposits, Ltd., with head office at Calgary, Alberta. This deposit, although somewhat smaller than some of the other deposits, contains sodium sulphate in a very pure state and several shipments have already been made. This company hopes in the near future to be in a position to put its product regularly on the market.

In British Columbia, the Basque Chemical Co. is operating a series of five lakes situated fifteen miles west of Ashcroft B. C. From these lakes they are excavating crude magnesium sulphate (Epsom salts) which is shipped to Vancouver where it is refined and sold as medicinal salts and to the tanning industry Plans are now under way for greatly extending the development of this deposit.

In the vicinity of Meadow lake, fifty miles north of Clinton, B. C., the Lillooet Soda Co. is operating a sodium carbonate lake and shipping their product to Vancouver over the Pacific Great Eastern Railway. This material is being disposed of at the present time to the soap manufacturers of the Pacific coast, but plans are under way to dry the material at the lake and increase the output.

The Main Products

The several main products which may be expected to be produced from these deposits are Glauber's salt, salt cake, Epsom salts, soda ash, and baking soda.

Sodium sulphate in the anhydrous form, more commonly known by its trade name of salt cake, finds its chief use in the manufacture of sulphate pulp, in metallurgical work in the refining of nickel, in the manufacture of window, plate, and bottle glass, and in making water-glass. In the hydrous form, it is marketed as Glauber's salt, and as such is used in tanning, in the textile industry as a mordant, and in medicine.

Hydrous magnesium sulphate or Epsom salts is largely used in the cotton trade for warp-sizing; it is also employed for medicinal and agricultural purposes, and in dyeing with aniline colours, since goods thus treated are found to withstand the action of soap better than those not so treated.

Sodium carbonate in the anhydrous form, known under the trade name of soda ash, is one of the principal forms in which sodium salts are used in the alkali industry, since it frequently forms the base from which other sodium compounds are made. It is used extensively in the manufacture of glass, soap, and dyes, as well as in cleansing preparations, metallurgical processes, and tanning. In the hydrous form it is marketed under the trade name of sal soda, washing soda or crystal carbonate and as such is used in softening water and to replace soda ash when purity is essential. Sodium bicarbonate or acid sodium carbonate, commonly known as baking soda, is generally marketed in a very pure form, and finds its principal use for making baking powders.

The operations of these companies tend to bring before the public the possibilities of the western provinces in the mineral field and should form the nucleus of the ever increasing industry which in time should prove of great importance to the whole of Canada.

MANUFACTURING FACTS ON PULP STONES

(From The Lombard News Letter)

The manufacture of pulp stones during recent years has become very much more complex and difficult. Years ago when running conditions were moderate, soft grades of stone were practicable, but with the increase of speed and pressure, pulp stone manufacturers have been forced to produce stones of stronger and harder rock to meet these severe conditions. To further complicate matters, nature has "thrown the monkey wrench into the gears" by very thoroughly and successfully breaking up the deposits of stone that, so far as quality is concerned, are particularly adapted to modern pulp grinding. This is particularly true in the English quarries, where in practically every instance deposits of stone suitable for pulp stones have been broken laterally and vertically by the stretching and contracting of the earth's surface to such an extent that it is almost impossible to find blocks sufficiently large to make the dimensions required.

To be specific, the pulp stone manufacturer's first problem is the overbearing or material which lies on top of the solid rock. This material, which runs into large tonnage, is usually of such a nature that it cannot be handled by steam shovels, and therefore it is entirely a question of manual labor in conjunction with steam cranes. This overbearing in many instances is forty to fifty feet thick, in some cases even more than this, and this material must be all removed before any pulp stones can be produced. The manufacturer never knows what the condition of the rock may be until after this work has been completed.

The rock, as above mentioned, in the English quarries is very much broken up and the next process requires considerable skill and long experience. Ragged, ill-shaped blocks must be drafted out and carefully plotted to obtain the required finished dimensions, and it is uncanny what a thorough practical knowledge of solid geometry is shown by the men who have this in charge whose educations have been limited to the "Three R's."

After the rough blocks are cut, and this cutting by the way is done entirely with wedges because of the risk of injury to the stone by the use of powder, they are placed in saw gangs and vertically sawed into the approximate thickness required. The blocks are then laid down under circular saws which saw out the circumference to within one-half inch of the finished dimensions. The stones are then ready for finishing, and are placed on semi-automatic finishing machines which cut the face and sides very accurately; especially insuring that the two sides of each stone be exactly parallel.

Several inspections have occurred up to this point, but after the stones are finished the final inspection takes place, and if the stone passes this very rigid inspection it is then put under a holing and recessing machine which finally completes the process of making the stone.

Referring again to the first paragraph of this article, all of these processes years ago were accomplished very rapidly owing to the nature of the stone, but the hardness of the modern stone makes each process more difficult. Saws, boring machines and finishing machines have to be two to three times as heavy as formerly, and the speed with which the work is done is comparatively slow. The finished product, however, is very much better than in former years, both in regard to finish and quality. The inspections are very rigid and are made so largely because of the demand by the mills for stones that are absolutely free from defects and especially adapted to their individual requirements. This latter feature is something that has been given a great deal of attention during the past few years and the improved quality is largely due to the records of mistakes of former years.

The pulp-stone buyer years ago was influenced largely by the life of the stone or the number of grinding hours that the stone was capable of. Today, however, he is influenced by other items which are of even greater importance. While the words "service" and "efficiency" have been much abused, we doubt if any industry has profited as much by scientific study of production costs as the paper trade. The modern buyer is influenced, aside from the grinding hours per stone, by the daily production, the number of stone installations per year, the loss of production due to stone trouble and frequent installations, the quality of pulp produced, the percentage of slivers, and last but not least, the annual cost of grinder repairs from using producer who is selling stones on a service rather than inferior qualities of stone. Therefore the pulp-stone price basis must produce a stone containing a very satisfactory number of grinding hours under severe conditions. The daily production must be high, as a few hundred pounds make a tremendous difference in the annual production. He must produce stones that prevent as many new installations per year as possible in order to minimize loss of production, and he must be in a position to supply the individual mills with the specific quality of stone that they require for the quality of pulp that they wish to produce.

Too much work, with no vacation, justifies a small libation, here's a toast, now drain your glasses, work is the curse of the drinking classes.

SWEDISH MINISTER TO U. S. A. VISITS CANADIAN MILLS

The Hon. Axel Wallenberg, Swedish Minister to the U. S. A. accompanied by his son and Mr. Gustof Asplund, representative of the Swedish Cellulose Association, has been on a visit to some of the American and Canadian pulp and paper mills. These gentlemen visited Quebec, Three Rivers, and Grand 'Mere, and also called on Mr. E. Beck, manager of the Canadian Pulp and Paper Association, Montreal. It may be mentioned that the Hon. A. Wallenberg is interested in the Swedish pulp and paper industry, and will shortly pay a visit to Sweden.

While in Montreal, the Minister discussed trade conditions in Sweden, and also spoke of the developments in Canada. He said that he had been impressed with industrial expansion here, and with the apparent forestry resources of Canada. At the same time he was surprised at the lavish way in which we are using those resources, and could not appreciate why greater precautions were not taken to prevent forest fires and other losses. He went on to say that Sweden did not allow the export of pulpwood, the policy of the country being in the direction of encouraging the manufacture and utilization of the raw material for finished products, instead of exporting that material.

The party was met at Montreal by Mr. Geo. W. Sisson, former president of the American Pulp and Paper Association, and his son, who motored back to New York with Mr. Wallenberg and Mr. Asplund, by way of the Adirondacks, visiting various paper plants en route. Mr. Wallenberg's son left for the Rocky Mountains, prior to entering Harvard University.

During his stay in Montreal, the Minister entertained a number of friends at dinner at the Ritz-Carlon Hotel, the party including Mr. Edward Beck.

THE FOREST RESOURCES OF THE WORLD

A Compilation of Unique Value

Occasionally a book is produced to which the term "Monumental" may be applied without serious exaggeration. This is true of "Forest Resources of the World" which is the result of generous co-operation on the part of the United States Department of Agriculture, the National Research Council and the McGraw Hill Book Company. Never before has there been brought between four covers (there are two volumes) the essential facts and available statistics which show the present status of the world's timber supply and consumption in terms of an understandable common denominator. All areas are given in acres and volumes in board feet, cubic feet or cords as is most appropriate to the particular subject under consideration, and are frequently given in terms of two units to facilitate comparison.

Some idea of the magnitude of the undertaking may be gained from the statement that in addition to a general summing up for each Continent there are separate discussions of the forest situation in each political or other important sub-division of the world. In other words, besides an excellent summation of the forest resources of Europe as a whole there are sections devoted to detailed exposition of the status of each of the 29 political or geographical sub-divisions of that Continent. The same treatment is given to 35 divisions of Asia, 50 divisions of Africa, 20 divisions of Australia and Oceanic, 13 divisions of South America and 29 divisions of Central America, North America and the West Indies, making a total of 176 regions for which there is an attempt to show in each case the forest area, the annual growth and the annual cut. A detailed discussion including the most important statistics and best estimates where statistics are lacking covers the topics of forest area, character and distribution of forest, character of ownership, annual growth, annual cut, exports and imports, domestic consumption, progress in forest conservation and probable future developments. There is also a discussion of the sources of other valauble forest products such as resins, gums, balsams, dyewoods and edible products.

The final result is two clearly written, well-manufactured and typographically attractive volumes, which contain 26 colored plates, showing forest classification in the most important regions, more than 400 statistical tables and a total (including an excellent index) of nearly 1,000 pages numbered consecutively from the first page of the first volume to the last page of the second volume.

Some conclusions of the authors, Messrs. Raphael Zon and William N. Sparhawk, Forest Economists of the United States Forest Service, are of especial interest. For example, it is stated that for the world as a whole the coniferous forests occupy about 35 per cent. of the total forest area, the temperate hardwoods 16 per cent and the tropical hardwoods about 49 per cent, but that 95 per cent of the coniferous forests, upon which the world depends for its construction material and most of its paper, are in the north temperate zone as are 89 per cent of the temperate hardwood forests. This zone has three-quarters of the world's population and consumes an even greater share of the timber used in the world.

After a discussion of the probable future needs for agricultural land and further increases in the demand for timber the conclusion is reached that for the world in general

> "The forests will continue to be reduced in area, and the quality of those remaining will tend to deteriorate, until the timber resources become so badly depleted that steps are taken to prevent further destruction and to build them up on a permanent basis. The history of forestry in most countries shows that effective steps toward forest regulation are seldom taken until a country's forest resources have become so depleted as to make it anxious regarding its own future supplies of timber."

At the present time it is said that only 10 per cent or 15 per cent. of the world's timberland is being handled as a renewable continuously productive resource, while an additional 15 per cent. or 20 per cent. is more or less protected from destruction, but that 65 per cent. to 75 per cent. receives no care whatever. By far the greater part of the conservatively managed timberland is in public ownership and public regulation of private forests, with few exceptions, is intended only to those classed as protection forests whose preservation is a public necessity. On the much-debated question of the public regulation of private forests, the following quotation is pertinent:

> "That it is much more feasible to regulate cutting on public forest lands than on those belonging to private individuals have been proved by the experience of several countries. Norway, France, Germany, Belgium, Italy, and others have been gradually taking back into public ownership the private forest lands whose preservation can not safely be entrusted to private owners, and only recently the United States has undertaken a similar policy, in the purchase of forest lands by the Nation and the individual States. Canada, on the other hand, has retained most of her timberland, and can adopt conservative methods of handling it without being hampered by conflicts with private property rights. In this respect most of the tropical countries have the advantage of still owning the greater part of their forests. As soon as economic conditions require it they will be able to profit by the experience of the older nations, and to organize their forests as permanent sources of timber both for domestic consumption and for supplying the world markets."

It is easy to criticize minor details in an undertaking of such size, but the value of this publication and its scope so far exceed anything hitherto attempted that the highest praise for substantial accomplishment is due to all who participated in the preparation and publication of these attactive volumes. There are, of course, many cases in which accurate statistics and even statistics of any kind are unavailable. Under such circumstances, it is most helpful to use the best estimates that can be made until better can be obtained and this the authors have not hesitated to do. The publication of the results of this study of the forest resources of the world comes at a time when such information is greatly needed and when more than ever before the people are waking up to a realization of the necessity for greater care for a basic natural resource.

A study of these volumes convinces us again that the United States and Canada, which once possessed the greatest forest wealth on the globe, cannot safely rely on outside sources for their future raw material for lumber, paper and a multitude of other wood products, but that they can and must produce their own. This work of reference should be on the book-shelf of every student of forest economics, every producer of wood products and every citizen who takes an interest in the sound development of the natural resources of his country.—R. S. Kellogg.

Note: The Pulp and Paper Magazine is trying to assist in the distribution of this excellent work and will deliver the two volumes, postpaid on receipt of $12.

The poor may be as covetous as the rich. Greed and love of money depend not upon the amount possessed. The little of one man may be as much his idol as is the abundance of another.

Woodlands Section

THE PULPWOOD COMMISSION

That there are others who do not like the way the pulpwood crisis is being met by the Government is shown in the following letter by "Canadian" in The Gazette, Montreal:

Sir,—The ineptitude of politics in dealing with a purely economic problem of vast import to the country's welfare was never better illustrated than by the order-in-council issued from Ottawa a few days ago appointing a commission to enquire into the forest resource of Canada with a view of determining the need or otherwise of an embargo upon the exportation of pulpwood and instructing the commissioners so appointed in their duties. It affords a fair illustration of the manner in which such vital matters as the railway problem, the immigration problem, the land problem, the public debt and other national issues are being trifled with, to the great injury of Canada's present well-being and to the jeopardy of its future solvency.

The order-in-council names five presumably very excellent gentlemen, none of whom, so far as the public is aware, has any practical knowledge of the subject which he is set to investigate, or is, by reason of his calling, competent to deal with a matter demanding much expert and technical understanding. One is a tobacco manufacturer, two are town lawyers, one is a lumberman and the fifth is a contractor. The only one whose vocation may be considered as bringing him, even remotely, in touch with the science of forestry is the lumbermen — and lumbermen, as is well known, are and always have been hereditary foes of timber conservation.

But it is when one comes to consider the duties devolving upon the commission that the hollowness of the proceeding becomes apparent.

The commissioners are required to enquire into and report upon (1) the extent in each province of wood of various kinds available for pulp; (2) the quantity of wood so available on lands owned by the provincial Governments and subject under provincial laws and regulations to restrictions requiring the partial or total manufacture of such wood in Canada; (3) the quantity of wood so available on lands owned by the Dominion Government and subject under federal laws and regulations to restrictions requiring partial or total manufacture in Canada; (4) the quantity of such wood on other lands and the conditions under which such lands are held, whether by ownership or lease, whether by corporations or individuals, whether by citizens of Canada or other countries; (5) the quantity of pulpwood produced in each province of Canada during the past ten years, showing the portion used in Canada and the portion exported.

All of the information at present available on these subjects, or that can be made available without the expenditure of a vast amount of time and money, is now carefully filed away in the archives of the several departments of the Government at Ottawa or is obtainable at the cost of a sheet of paper and a two-cent stamp from the governments of the several provinces.

A $20-a-week clerk in the employ of the forestry division of the Department of the Interior at Ottawa should be able to dig up all the required information, so far as is available to collate it and present it for inspection within the course of thirty-six hours.

Instead, a commission is to rove about the country, for months probably, the chairman to be paid $35 a day and each of the other commissioners $25 a day, with $15 extra as an expense allowance, seeking for information which is already available in Ottawa right under the Government's very nose.

Left alone, the acting director of forestry, who is attached to the commission as its secretary, and who, although granted no extra emolument for his services as such, is to receive $15 a day expense allowance while away from Ottawa, could, in the course of a few hours, compile a report giving all the information asked for — again, in its only at present, available form — without leaving his office chair.

But Parliament, at the instance of the Government, voted a preliminary grant of twenty thousand dollars — added that amount to a budget already over-extended and increased by that amount the burden of an already over-taxed people — and so the enquiry, however useless and impotent it may prove to be, must proceed. It may cost four or five times that amount before its work is completed.

It is not necessary here to go into the intrinsic value of the information which the commission is instructed to obtain, although its usefulness as a basis on which to formulate a national policy of forest conservation is open to question, since its authenticity has never been accepted by those best qualified to judge. It is based on rule-of-thumb averages and estimates rather than on actual knowledge. No really authentic or reliable inventory of Canada's forest resources exists, nor could one be made without years being consumed in its accomplishment, the employment of numerous experts and the expenditure of many thousands of dollars, involving a task far beyond the powers and scope of the present commission.

But the order-in-council goes beyond this. It shifts from the shoulders of the Government the responsibility of making a national policy, upon which the continued prosperity if not the existence of the country's most important manufacturing industry depends, and transfers it to a board of private individuals!

The commission is to determine, in the words of the order, "The question of the prohibition or restriction of the export of pulpwood from Canada."

Those who complain that Ottawa lacks initiative, leadership and the courage to mark out its own course in national affairs will find in this remarkable order-in-council ample support for their contention.

No time limit is set upon the activities of the commission. It may take months or years to accomplish its task. Meanwhile, the raid on Canada's fast diminishing pulpwood resources for the benefit of foreign exploiters, goes on unchecked and with increasing vigor.

So far as our forests are concerned, the "whisper of death" has developed into a roar of destruction.

The July trade returns, just made available show that 151,794 cords of pulpwood — a century's growth from at least 30,348 acres of land — were taken out of Canada during that month, as compared with 90,966 cords during the corresponding month of last year, an increase of 60,829 cords or 67 per cent. over last year.

The case for an embargo on the export of pulpwood is to be found in the monthly trade returns of the Department of Trade and Commerce and not in the needless peregrinations about the country of a political commission, whose chief function so far has been to relieve the Government of the necessity of making an embarrassing decision.

These returns supply indisputable evidence that the forest industries of Canada are being drained of their very life-blood for alien benefit.

While Canada is thus being raided of one of its most vital raw materials, and while our pulp and paper industry has about reached its maximum development, owing to the rate at which our pulpwood is being depleted, it is illuminating to note that Newfoundland — where an embargo on the export of pulpwood has for many years been a part of the statutory law of the land — is the scene of a pulp and paper development now in progress that will rival any now existing in Canada, the governments of Great Britain and Newfoundland having joined in guaranteeing a capital investment of twenty millions of dollars for the purpose.

Without its embargo on pulpwood, Newfoundland, without any question, would long since have been denuded of her forest resources, which alone make such a development possible, in the same way that Canada is now being denuded of hers.

URGES STATE FORESTS

Winnipeg, August 20.— In relating the difficulties experienced by the Allies during the war from lack of forest reserves, General Lord Lovat, chairman of the British Empire Forestry Conference, declares the possibility of another emergency and demands action to forestall danger that might result from a shortage in the future. He made this declaration while addressing a joint luncheon given by the Manitoba Government and the Canadian Club in honor of the delegates to the conference.

Canada was in the most favorable position at the present time of any country in the world for forest cultivation. Lord Lovat said, and he advocated state forests for the Dominion, where experiments in applied research could be made on a commercial instead of a laboratory scale.

The delegates were welcomed to the province by John Bracken, Premier of Manitoba, and Lieutenant-Governor Sir James Aikins. The party leaves this evening for Indian Head and Regina, and the tour will conclude at Vancouver on September 7th.

BARNJUM CHALLENGES GOVERNMENT

Editor, Pulp & Paper Magazine

Dear Sir:

Of all the extravagant farces foisted upon the Canadian people by the present Government the recently appointed pulpwood commission probably takes the lead.

In the first place there was absolutely no necessity for any commission to enquire into a matter that the members of the Government have repeatedly stated they knew all about. I made the offer to the Minister of Finance in more than one occasion that if he would select an independent, unbiased committee I would take them on a four months' trip across our supposedly wooded areas, at my own expense, and if they did not report conditions with regard to Canada's wood supply, after a careful investigation, more alarming than as stated by me, I would never mention forest conservation to him again. The Minister's reply was that he did not question my statements and believed them all. Another Cabinet Minister stated on the floor of the House that if drastic steps were not now taken, our forests would soon be but a memory. Other prominent Ministers have stated there was no answer to my arguments. What need then of a commission?

* * *

There can be only two reasons for the appointment of this commission, namely, the furnishing of political appointments, with large emoluments to partisan friends, and — the delay of any action on the part of the Government for a sufficient length of time to allow Americans to carry away last of our most available and valuable pulpwood. The Americans, with their usual acumen, have proceeded with lightning-like rapidity, to take advantage of the opportunity with a vengeance by immediately shutting down woods operations in their own country and transferring all cutting to the Canadian side.

The personnel of the commission consists of a city manufacturer for chairman, with the balance of the commission made up of two city lawyers and one lumberman. The farmer or settler, about whom the Government pretended to be so solicitous, has no representative. The appointees are no doubt all very estimable gentlemen, but they are not of the calling that an ordinary business man would select to investigate the pulpwood situation.

The first appropriation for the expense of the commission is twenty thousand dollars, but with the amount of work laid down, which should take two years to complete, it will involve several times this amount, while the Government could have obtained all the information asked for gratis through its own Forestry Branch.

* * *

While the Government has been deciding as to which of their friends should receive the rich plums, a loss of thirteen million dollars has been suffered by Canada through the export of unmanufactured wood. These exports are now going out of the country at the rate of two million cords annually, based on the Government report for June, and will undoubtedly increase to an even greater figure in anticipation of the Embargo being applied, thereby hastening the day when Canada will be forced to import high priced newsprint from the United States. In the meantime Canada is actually suffering a loss of six million and a half dollars monthly, or seventy-eight million dollars annually, through this export of unmanufactured wood.

This pulpwood commission will go down in history as one of the most costly commissions ever foisted on the Canadian people.

I read a statement in the press to-day which was put out by some of the enemies of Canada that timber is growing in this country twice as fast as it is being cut and destroyed, and this is merely a sample of the propaganda that is being carried on with the one object in view of putting the people to sleep while our last available trees are being shipped out of the country. If this statement were true there would be more standing wood in Canada to-day than there was a hundred years ago. In fact, the forests would be crowding the people into the ocean. Instead of which our woods operators are to-day scouring the upper reaches and very headwaters of our rivers, cutting small trees where it takes as many, in some cases, as fifty trees to make a cord of pulpwood, and where the distance is so great from the mills that it takes two and three years to drive the wood to its point of manufacture, and the same kind of wood, which really belongs to our grand-children and not to us, is being cut and hauled by rail and water 600 to 1,000 miles.

* * *

This is the answer to these enemies of Canada and to the Government to show the absolute childishness, folly and utter waste of the people's money in appointing a ommission to enquire into a matter that is so perfectly apparent to the merest schoolboy.

I am not worrying so much as to how soon the Government will put the embargo in force as to where our pulp and paper mills are to obtain a wood supply in five years from now, some of them being already out of wood on their own watershed.

The annual increases in the destruction, consumption and exports of pulpwood are so appalling that unless mmediately checked will end in bankruptcy.

* * *

So far as the embargo is concerned the friends of good government should rejoice in every day's delay on the part of the Government in its application of this measure, as no amount of American campaign funds will change the result in the next general election.

I call upon the Prime Minister to ask for the resignaion of any members of the Canadian Parliament who are receiving fees from foreign corporations — corporations whose interests are diametrically opposed to he interests of the Canadian people, who have hired and are paying them to protect the interests of Canada. t may be permissible for members of the House of Commons to retain their seat while at the same time acting in the capacity of solicitor for a Canadian corporation, but certainly not for foreign corporations whose one great desire is to rob Canada of her birthright.

I call upon the Government to take a plebiscite on the question "Shall Canada continue to be a hewer of wood or a manufacturer of her own raw materials?"

I challenge the Government to appeal to the people n this one question.

I challenge the Government to appeal to the people n their record or entire lack of any record except as debt and tax raisers.

Party politics mean nothing to a debt-ridden, overurdened, taxed-to-death people. Men and measures re the cry to-day. —Frank J. D. Barnjum.

He who wants the most important place he can get n the kingdom of God on earth is qualifying for the least important place in the kingdom of God in heaven.

BROMPTON BUYS DOMINION LIME

(Special to The Gazette.)

Sherbrooke, August 8. —It is officially announced that the Dominion Lime Company, one of the largest shippers of lime in the Dominion, has passed into the hands of the Brompton Pulp and Paper Company. The paper company, one of the largest users of lump lime, is understood to have paid $50 a share for its controlling interest and an offer is being made to other shareholders on somewhat similar lines. The Dominion Lime Company, established nearly forty years ago, has been operating without interruption since the time of its original activities and the plant, located at Lime Ridge, Que., along the Maine Central, is one of the most modern of its kind in the Dominion.

The company is one of the largest shippers of lime in the country, and manufactures the famous "Dudswell" brand, which, is a very high grade product and analyses in some instances as high as 99 per cent pure lime, while it is unsurpassed for strength and whiteness. Lump lime is shipped in bulk as well as in wooden and steel barrels, while crushed limestone for fluxing purposes represents another product. The company also manufactures all grades of pulverized limestone for agricultural purposes.

It is interesting to note that, owing to the large demand for hydrated lime, the company is at present constructing a modern hydrating plant. Hydrated lime replaces, to a large extent, the ordinary lump lime and is used as a wall finish, as well as for general building purposes. The company employs some fifty hands the year round.

The old board, which has returned, was as follows: President, James MacKinnon; directors, E. L. Stewart Patterson, Colonel H. R. Fraser, Senator R. H. Pope, W. S. Dresser, M. W. Mitchell, John C. Spring, of Boston, and A. F. Fraser.

The new board is as follows: F. N. McCrea, M.P., E. W. Tobin, M.P., C. C. Wilson, W. N. Munroe, C. G. Greenshields, H. W. Beauclerk, and J. A. Bothwell. A meeting will be held towards the end of the month, at which the new officers will be elected. James MacKinnon has agreed to continue as president of the company until August 31st.

Mr. MacKinnon has been president of the company for the past several years, replacing the late William Farwell.

It is understood, on reliable authority that there will be no change made in the name or management of the company and A. F. Fraser, who has been connected with the company for the past ten or twelve years, as general manager and secretary-treasurer will continue to act in this capacity.

Among the original directors of the Dominion Lime Co. were William Angus F. P. Buck, C. A. French, W. W. Bailey, Hon. G. J. Robertson, Hon. Frank Jones, Geo. Van Duke, J. R. Woodward and the Hon. W. B. Ives, all well known throughout the Eastern Townships. The change in the controlling interest, as outlined above, has been confirmed by officials of the Dominion Lime Company, as well as of the Brompton Pulp and Paper Company.

"I jist like to let her in at the door," said an Irish maid one day, of a woman we know, whose face was always cheery and bright; "the face of her does one good, shure."

PULP AND PAPER NEWS

The plant of the International Fibre Board Company, wall board manufacturers, at Penetanguishene, Ont., was totally destroyed by fire on Aug. 19. When the alarm was sounded at 3.30 o'clock in the afternoon the pulp piles of the company were a mass of smoke. In the outer walls of the building is a fan to carry off the dust from the factory, and firemen think that this fan in action caused the flames to spread to the building. The fan was shut off too late to save the building. The company was preparing to enlarge its plant and to employ 300 men this season. W. H. Shaver is the general manager.

According to Hon. T. W. McGarry, Toronto, of the Whalen Pulp and Paper Mills, Ltd., the various mills of the company have been operating at capacity during the past year. One of the additions to plant was the installation of a complete oil-burning system in the company's mill at Port Alice. President McGarry expects to leave shortly for the Pacific Coast and will attend a meeting of the shareholders to be held at Vancouver within the next few weeks. In Toronto last week it was officially denied that the company had any connection with the Home Bank which closed its doors in Toronto a few days ago.

Considerable damage was caused to the electrical equipment of the mill of the Spanish River Pulp and Paper Mills, Limited, at Sault Ste. Marie, Ont., on Aug. 21 through a short-circuit in the company's lines. The city was plunged in darkness for over an hour and the street cars were stalled for lack of power. The damage amounted to several hundred dollars and was soon repaired.

In conversation with the Pulp and Paper Magazine of Canada in Toronto last week, Joseph Kilgour,, President of Kilgour Bros., Limited, paper bag manufacturers and paper merchants, confirmed the brief statement in the press that the company would erect a paper bag making plant at Windsor Mills, Que. The new structure will be 90 x 150 feet and will be three storeys in height. It will be designed for paper bag manufacture and for warehouse purposes and will be erected on property adjoining the present plant of the Canada Paper Co. Work has already been commenced and the firm expects to have the new factory in operation inside of three months.

David F. Robertson, of the Canadian Paper Board Company, Limited, Montreal, was a business visitor in Toronto last week.

Discussing the report that the Fort William Paper Company were seriously entertaining the idea of doubling their capacity in their plant at Fort William, J. G. Gibson, Toronto, secretary of the company, said last week that while the matter had been in the air for some time it was no nearer consummation now than it had been some months ago. He stated, however, that the directors would meet in Fort William in a week or ten days time and it was possible that the question of extending the mill might come up then — and again it might not. In fact Mr. Gibson said that the visit of the directors to the mill this month would have no special significance as far as extending the present plant went.

Directors of the Spanish River Pulp and Paper Mills, Limited, will gather at Sault Ste. Marie, Ont., next week and some days will be spent in inspecting the company's mills at the Soo, Espanola and Sturgeon Falls.

Col. C. H. L. Jones, of Sault Ste. Marie, Ont., general manager of the Spanish River Pulp and Paper Mills, Limited, was a visitor in Toronto last week.

John G. Sutherland's many friends in the paper trade in Toronto were pleased to greet him again last week on the occasion of a visit to the city, he having motored over with his wife from Dayton, Ohio, where he is connected with the Mead Sales Company. Mr. Sutherland was one of the original salesmen of the old Spanish River Company at Espanola and is widely known throughout the Ontario paper trade.

The Toronto Club of Printing House Craftsmen held a luncheon meeting at Scarboro Beach Park, Toronto, on August 22, when delegates were appointed to attend the Buffalo convention August 30, 31 and Sept. 1. A big delegation from Toronto is assured.

The city council of Fort William has agreed to deliver daily 1,500,00 gallons of Loch Lomond water to the property of the Great Lakes Pulp and Paper Company at the Neebling boundary. The city is to provide the meter and make installations necessary for the collection. The revenue will amount to $30 a day and it is understood that the rates were figured out on the basis of agreements made with other large users of city water. It is stated that under existing conditions about 4,500,000 gallons of water wastes from the lake every day and that the agreement will give the city a revenue from a portion of water which has hitherto gone down the river. The arrangement is a temporary one which may be altered if it proves inconvenient to the city. A considerable amount of preliminary engineering work has already been done in connection with the proposed plant during the past three months and it is understood that such is the nature of the site that, from an engineering standpoint that the mill may be expected to be in operation at least two months earlier than was originally contemplated.

Mayor Matthews, of Port Arthur, who was in Toronto recently, said that the contract to supply power to the Great Lakes Pulp and Paper Company at $18 per horse power was going to seriously handicap the two pulp mills and the paper mill in Port Arthur where a higher rate for power was being paid. When the Great Lakes company started operations, he said, there was no doubt other mills would make representations to have any disadvantages removed and consequently to have their power rate reduced. Mayor Matthews stated that the Thunder Bay Paper Company was renewing its application for a timber limit. It was estimated that 10,000 horse power would be required to operate the mill.

A visitor to Toronto just now is A. MacKenzie Livingstone, of Livingstone Page & Co., paper makers agents, London, England, who stated in an interview that the high standards of excellence attained and maintained by the printing industry of Great Britain was due largely to the paper that they used. No Canadian jobber, he said, need fear the introduction of these papers, as they did not compete with any paper for printing purposes produced in this country. "I notice a distinct difference between the business man of New York and of Canada," he said. "Your Canadian does not look so worried nor care-worn as the man from New York. There is on openness and breadth about this country that is simply delightful." It is Mr. Livingstone's first visit to the Dominion.

A train bearing 42 cars of newsprint, and constituting the longest train of newsprint that ever left Northern Ontario, arrived in Toronto on August 24. It came from Abitibi Pulp and Paper Company's plant at Iroquois Falls and it left North Bay drawn by one of the latest type passenger locomotives which the Canadian Pacific is building at its Angus shops. Ordinarily it would require two engines to haul this train of more than 1,100 tons, but a record was established when the huge engine arrived in Toronto without mishap. Water was taken but four times during the trip. Included in the train were cars for the various newspapers in Canada and twelve United States newspapers, the entire shipment representing the cut made upon more than 200 acres of pulpwood.

Mr. F. H. Lock of the Canadian Paperboard Company, Limited, attended a meeting of the Purchasing Agents Association of Montreal held on August 21. The annual convention of the Canadian Associations will be held at Hamilton on October 19.

Col. R. R. McCormick, president of the Chicago Tribune, and director of the Ontario Paper Company, Limited, and Mr. Warren Curtis, Jr., mill manager, with other members of the staff, were in Montreal last week en route to the company's property on the north shore of the St. Lawrence.

Mr. F. W. Clarke, president and general manager of the Gulf Pulp and Paper Company, Clarke City, P. Q., is making his annual trip to England to confer with the Northcliffe interests.

The plans of the Armstrong Whitworth Company's pulp and paper plant in Newfoundland include the building of a small town with two churches, a theatre, a school and 800 houses.

Mr. J. D. Gilmour, woods manager and director of the Anglo-Newfoundland Development Company, Limited, was a visitor to Montreal last week. Referring to the question of the export of pulpwood, he stated that the Government of Newfoundland prohibited this. Two concessions had been made in exceptional cases where the wood was so situated that it was not available for domestic manufacture.

The Quebec Government have decided to open a school for printers in Montreal, with the object of training printers.

The St. Regis Paper Company, Limited have a large force of men engaged in the construction of wharves and other work at Godbout, P. Q. This work includes the building of a chute for conveying pulpwood from the God bout River overland to Godbout Harbor, this system being in connection with a plant for preparing the pulpwood.

New Brunswick News

Among the names mentioned for a vacant seat in the Canadian Senate from New Brunswick are those of Angus McLean of Bathurst, president of the Bathurst Company and Donald Fraser of Plaster Rock, president of the Fraser Companies Limited.

The first newsprint produced in the new paper mill of the Bathurst Company at Bathurst, N.B., was delivered to the New Brunswick Publishing Company, publishers of two daily newspapers in St. John. A year ago the New Brunswick Publishing Company in which the Bathurst Company executive is understood to have an interest, leased the publishing plant in St. John of the Standard, Limited, and changed the name of that morning daily to the Daily Journal. Recently, the New Brunswick Publishing Company secured control of the Daily Telegraph and Evening Times two daily papers owned for twelve years by J. E. Moore, lumberman and Geo. McAvity, manufacturer and merchant. The Daily Journal has been merged with the Daily Telegraph.

Low water is causing much trouble for the pulp and paper companies, in rafting operations. Some of the most important rivers have decreased alarmingly in depth. In some cases the water has dropped from twelve feet to two feet, and in some cases the river beds are showing, where normally at this time of year there would be ten to fifteen feet of water. The water has never been known to be so low. This is in direct contrast with the highest freshets ever known in the spring. Indications are that a large percentage of pulpwood logs will be remaining on the banks of the rivers, unless the water rises appreciably before the ice forms in November.

SLASH BURNING EDICT FOR N. B.

Spring and summer slash burning has been prohibited in New Brunswick, as a result of the agitation for increased precautions to prevent forest fires.

This decision has been reached by the Minister of Lands and Mines and is promulgated in a proclamation published in the Royal Gazette this week; the only period during which slash burning will be allowed will be during the month ending September 15th and then only under permit and official supervision.

Regulations which thus become effective provide for the burning of slash under the direct supervision of fire rangers in their districts, provision being made for special attention being paid to precautions against the spread of fires. The proclamation vests in Forest Rangers authority to issue or refuse permits, according to the conditions prevailing in their districts, and any person burning under the new arrangement is required to notify his immediate neighbors before setting fire so that they may take the necessary steps to protect their property.

Temptations are the crises which test the strength of character. Whether we stand or fall at these crises depends largely on what we are before the testing comes.

Men speak of heaven and hell as if these were merely places of habitation. But heaven is the confirmation of character and so is hell. Happiness is impossible to evil.

UNITED STATES NOTES

Announcement was made last Thursday by the United States Service of the conditional sale of 334,000,000 cubic feet of timber on the Government's Alaskan reservations to Hutton, McNear & Dougherty of San Francisco at 60 cents a cord for Sitka spruce and 30 cents for Western hemlock, which prices will stand until 1931, to be revised subsequently at five-year intervals. Title to the land remains in the Government. According to the Forest Service, under the perpetual timber supply plan at least 1,500,000 tons of paper can ultimately be produced in Alaska every year. The quantity is more than one half of the newsprint now consumed annually in the United States and nearly 20 per cent of the total consumption of all kinds of paper and wood fibre products. The San Francisco firm purchased what is known as the Cascade Creek unit of pulp timber, situated on Thomas Bay, in the Tongass National Forest. The buyer has compiled with all of the terms specified by the Forest Service in the advertisement of the sale, which has been running four months. When satisfactory financial guarantees to insure carrying out the project are filed at Juneau, a final contract will be approved. The unit is the second of fourteen pulp and paper units in the Tongass National Forest within which sales have been awarded following legal advertisement. As the contractors cut off the timber they will be bound to plant seed-trees enough to insure a perpetual supply. They must agree to establish pulp and paper mills with a specified minimum production.

In Government circles the view is taken that the development of this vast pulpwood area will greatly reduce the pressure upon the fast vanishing timber supplies in the United States. It is expected also to reduce very materially the country's dependence on Canadian timber. It will mean, as well, a continuous source of public revenue and will have powerful exemplary consequences for scientific forestry throughout the country.

Chief Forester Greely believes that the Alaskan forests can be made to supply about 60 per cent. of the present consumption in the United States. Other pulpwood districts in the Puget Sound region, the Southern States and New England can be made to take care of the remaining 40 per cent. of the country's requirements, and with a reasonable margin for safety. Pulp and paper manufacturing plants in Alaska can operate twelve months in the year, the Chief Forester claims, as climatic conditions are much more favorable for such work than is popularly believed. "Should the Canadian Government put into effect the embargo legislation already enacted." Mr. Greeley declared, "many American paper mills of Northern New York and New England will be compelled to go out of business or remove their plants elsewhere. This removal process would entail an enormous expense, and we hope it may not become necessary. It must not be thought, however, that the paper consumers of this country must rest permanently at the mercy of Canada for such is not the case. At present 56 per cent. of our newsprint comes from Canada in one form or another, but we can furnish it all eventually if we are forced to it. It would mean merely a rather uncomfortable process of readjustment."

The first sale of pulp timber area awarded to operators in the Tongass Forest was made in the latter part of 1920, when the Alaska Pulp and Paper Company of Seattle bought about 15,000,000 cubic feet of stumpage within the Port Snettisham unit. This company is now operating a small pulp mill and expects to erect a newsprint plant. A third sale is now pending.

Licenses to develop the water power in the national forests of Alaska are obtained from the Federal Power Commission, under an arrangement which allocates the power sited to the manufacture of the timber most logically available to them. The Cascade Creek site has an estimated capacity of 23,700 horsepower. The Forest Service and the Federal Power Commission are collaborating in a survey of the more important water-powers in Southwestern Alaska, whose development will facilitate the establishment of a paper industry.

All Holyoke paper mills, according to statements given out by their managements, resumed operations last Wednesday despite the strike of stationery firemen. Hope of an immediate settlement with the firemen now in the fifth week of the strike, has been abandoned. The mill owners have been turning their efforts to filling the places of the striking firemen. The manufacturers have offered to adjust working conditions, but declined to raise wages. The firemen have turned down this offer.

The outlook for paper mills throughout New England is that there will be a revival of activity after the summer lull about a month earlier than usual, or during September rather than October. Exceptionally good orders have poured in during the summer.

Tentative plans under consideration for a reorganzation of the American Writing Paper Company are expected to include an assessment on the common and preferred shares to supply working capital and funds to pay off the company's indebtedness. It is quite probable that the large accumulations in back dividends on the preferred stock will be wiped out in the course of events, as there appears very little chance that they can be paid. At the present time deferred dividends on the $12,500,000 7 per cent. preferred stock total 158 per cent. The formation of a committee to formulate details for financing is being delayed by the absence of several directors.

Paper production and shipments in July are shown by the American Paper and Pulp Association's monthly summary to have declined noticeably as compared to June. The decreased production applies to all grades, and shipments decreased in all grades with the exception of hangings. Newsprint production was off 7 per cent. and shipments 8 per cent.; book paper 14 and 17 per cent respectively; paper board, 16 and 15 per cent.; boxboard, 25 and 24 per cent; wrapping paper, 19 and 18 per cent.; bag, 41 and 26 per cent.; fine, 21 and 19 per cent.; tissues, 20 and 10 per cent.; hanging, 8 and 2 per cent.; (the latter figure represents gain).; felts and building, 7 and 7 per cent.; other grades, 14 and 17 per cent. Total decrease in production, all grades, 14 per cent., and shipments, 12 per cent. The reduced production is accounted for by the fact that the month had fewer working days than June, as well as to the fact that seasonal conditions usually operate to restrict operations in July.

British Trade News

(From our London Correspondent)

London, August 13, 1923. — There is a good discussion on Kraft paper and prices going on in England at present. It has arisen over foreign prices and the qualities placed on the British. I have pointed out at frequent intervals that the British mills find it almost impossible to compete with the Scandinavian and German prices of kraft paper owing, amongst other causes, to the depreciation in the rates of exchange in Europe. This week nearly a truck load of German Marks could be secured for the British sovereign and with financial conditions in such a state of chaos it is really impossible for the British mill owner to enter into a straightforward, open, honest, competition, because his rivals have him throttled on the question of cheaper production. These foreign prices are also affecting Canadian Kraft in the British market and there is only one way to stop the present unfair competition and that is by putting on an import duty for countries outside the British Empire, while the debased rates of exchange exist. Millowners here would greet it smiling, but the old Liberal school — now nearly extinct — might rouse an intensive agitation to kill it.

New Mill

W. V. Bowater & Sons are going to build a mill on the old Northfleet dockyard, which is on the Thames opposite Tillbury docks. I understand that two of the Walmsley's 221 inch fast running machines will be installed for newsprint production. The position secured for the mill is a good one as vessels from Canada and Scandinavia will be able to discharge pulp at the front door directly they swing into the river from the Channel.

Finnish Pulp Industry

This week I was talking to a pulpwood seller from Finland. He tells me that conditions are good and the people and industries are getting well away with their revival in trade. "For four months," he added, "I have been doing nothing but studying conditions in the forests for my firm and looking into labor saving devices. I could see everywhere I went, plenty of work and there are plenty of orders. I have just run across to London to see if I can sell pulpwood. We have big stocks on hand and I want to sell a few cargoes — will you buy one." That is the spirit in Finland just now and only 473 men are out of employment in the country.

Sweden's Oldest Mill

A noteworthy jubilee has just been celebrated in Sweden at Klippans paper mill. This is the oldest paper mill in Sweden and dates back 350 years. It was a Crown paper mill until 1772, when it was sold to a private company. In 1832 Sweden's first machine paper mill was established on the site. The business was greatly increased by Charles A. Bock, who rebuilt the mill and extended the business, which now employs several hundred workers The principal output is in the finer quality papers.

Becker & Co., Ltd.

To comply with the requirements of the Stock Exchange, and for information only, particulars of their undertaking, more especially as regards £200,000 6 p.c. First Debenture stock, free of tax, are announced by Becker & Co. Ltd. The stock constitutes a floating charge on the assets of the business, subject to $1,473,600 7 p.c. collateral Trust Bonds of the Saguenay Pulp and Power Co. The stock is redeemable by an annual payment to the trustees of £4,000 or by drawings. The company sold to the Hedley Trust, Ltd., £100,000 stock at 95 p.c. and there is now a balance in hand of £83,800 which is held as security by the company's bankers. It is proposed to sell this stock when the opportunity arises. The total amount of stock now outstanding is £198,000.

It is stated that Becker & Co. Ltd. have contracted for the whole of the production of the Folla Pulp Mills, in Norway. The production will be about 10,000 tons this year.

Studying Canada

Mr. A. Mackenzie Livingstone, of the firm of Livingstone Page & Co., is in Canada trying to develop trade in the Dominion market for some of the high quality papers his firm handle.

Mr. Eric Bowater is also in America studying the interest of the firm of Bowater.

Senator "Jim" Couzens arrived in London this week to study afforestation in Europe for the Senate forestry committee. He says he is going to Germany and Russia, after he has a look round France and Belgium.

The Pulp Market

The market is unchanged, owing to the holiday feeling that pervades it. Prices are also unchanged.

The strike of dock workers in London has greatly dislocated business. In other ports all the men have resumed work.

Some Fire-Fighters!

It is doubtful if there is a paper or pulp mill equipped with two bands of fire-fighters as exist in the Apsley mill and the Cronley mill of John Dickinson & Co., of Hertfordshire. Their appliances, motors, pumps, fire escapes, are modern and at the English competitions of National Fire Brigades the Apsley men secured 12 prizes for smartness and quickness in work and the Cronley men four prizes. This is a record.

BRITISH EMPIRE EXHIBITION

Work is proceeding apace with the great exhibition buildings at Wembley, near London, and the accompanying plan will give an idea of the extent of the ground that will be covered. Space is now nearly all booked up and the position of the Canadian section is shown in close proximity to Australia. The Prince of Wales states that the organisation of the exhibition is now on a sound basis and it was a bold challenge which the Empire made to the world when it undertook the task of organising the exhibition so soon after the devastating and unsettled conditions caused by the Great War. They must show to the world that the Empire possesses the same unity, courage, and perseverance in peace-time as in the stress of war. The British Empire Exhibition was not a business venture — it was a mighty high ideal and should mark a new era in imperial trade.

Pejepscot Paper Co. is making changes of an extensive nature at its Topsham mills. New roofs are being put on both machine rooms and a number of improvements in equipment are being installed. A new boiler house is being built at its Lisbon Falls plant.

Low water is giving trouble in many of the mills in Maine, several have lost much time in shut downs,

The Markets

CANADIAN TRADE CONDITIONS

Montreal, August 28. - "Don't think I am a pessimist". I am not. I am convinced that Canada will progress, carry her load of debt and pay it. We have been through a serious dpression, but we are on the upgrade. I neither expect nor hope for a trade boom, but I look for steady improvement in business for several years to come, and that this country will successfully solve the many problems before it.' The above is an extract from a speech made by Mr. C. Howard Smith, president of the Howard Smith Paper Mills, Limited, at a meeting of the Kiwanis Club, Montreal on August 23. This opinion may be fairly said to be the view taken by most people in the paper trade not only as regards their particular line but as regards the general commercial outlook. Mr. Smith argued that it was the wisest policy to manufacture the raw materials into the finished product rather than export these materials to be finished in other countries, and he instanced the export of pulpwood, the trade in which he said was facilitated by favorable railway rates to the States.

Although the paper business in Montreal is very, very slow in practically all lines, there is a decided disposition to look on the bright side, and to expect, to use Mr. Smith's expression, a steady improvement. The mills report that orders are not coming in very well but here again there is a disposition to take a cheerful view of prospects.

The time is not far distant when the price of newsprint for 1924 will be under consideration. That price will be set after the study of several factors, and it is more than probable that we shall see an advance. Conditions are shaping towards that end. The value of pulpwood is going up, under the stimulus of an increased demand, the dealers naturally taking advantage of this to boost prices, while the price of groundwood is also ascending, as high as $52 per ton having been paid for high grade mechanical pulp. This is all indicative of a bigger price for newsprint. Word has reached Montreal that many of the American newspaper publishers are adjusting themselves to that possibility and that no great opposition is anticipated from this quarter. The publishers are in fact beginning to realise that if they are to be assured of a continuous and reliable supply of newsprint at reasonable prices in the future, the paper manufacturers must obtain a market price for their output that will allow a sufficient margin to put back a fair amount of capital into forest upkeep, the only alternative to this being a very rapid depletion of the remaining pulpwood, with the certainty of a scarcity of paper later on, necessitating a price far beyond that now thought of.

During July Canadian newsprint mills produced 105,716 tons of newsprint, compared with 90,282 tons in July 1922, bringing up the total for the seven months of the year to 727,613 tons, an increase of 120,825 tons or 20 per cent over that of 1922. Canada is increasing her output at a greater rate than the United States, and is gradually approaching the total production of American mills. The exports of newsprint by Canadian mills in July totalled 92,958 tons, compared with 77,004 in July, 1922; the total for the seven months was 643,724 tons as against 534,344 in 1922, a gain of 20 per cent. The States took practically the whole of the Canadian exports, British South Africa, Australia and New Zealand buying a total of 14,000 tons. Exports to the U. S. A. in the seven months were greater than last year by 134,429 tons or 27 per cent.

The exports of book paper in July showed an appreciable decrease on those of July 1922 — 257,100 pounds against 617,700, this being due to smaller shipments to the U. K. and Australia, and also to the fact that New Zealand dropped out of the market. For the seven months however our mills are away ahead of the corresponding period in 1922; the figures are 2,925,600 pounds in 1923 and 930,400 in 1922. In bonds and writings a different state of affairs is shown, the July exports being 190,100 pounds compared with 157,400 in 1922. The total for the seven months' period is striking 1,501,800 pounds against 501,000 pounds in 1922. The U. K. South Africa, Australia, New Zealand, India and Japan bought heavily, Australia with 489,000 pounds, taking about double this year, while the U. K. requirements rose from 20,800 to 176,400 pounds. In kraft wrapping paper, the exports in July were 1,643 tons compared with 1826 in 1922. The figures for the seven months being 12,153 tons against 9,728. The U. K. Japan and Australia were the chief customers.

Groundwood is the feature of the pulp section. It is scarce, and the price is advancing. Water conditions in Northern New York are such as to handicap grinding, and the mills are looking to Canada to secure supplies, which are far from abundant. Bleached sulphite is in fair demand with the outlook promising. The pulp export figures for July show little variation except for groundwood. The shipments of this pulp amounted to 34,047 tons compared with 26,873 in July 1922, the U. S. A. taking 18,349, the U. K. 11,907 and France 3,791. For the seven months the exports were 172,225 tons against 144,145 in 1922. Bleached sulphite shipments were 12,590 in July compared with 13,312 in 1922, while the figures for the seven months were 95,894 and 81,242 respectively. Canadian mills shipped 24,819 tons of unbleached sulphite in July, practically the same as in 1922, bringing the total for the seven months to 130,620, compared with 102,026 in 1922. The U. S. A. and the U. K. were the principal buyers. The U. S. A. purchased all the exports of kraft pulp, amounting to 12,468 tons in July, and the same remark applies to the exports for the seven months, 81,420 tons.

Although the principals of some American mills express the opinion that the Government Commission into the question of a pulpwood embargo is not to be taken seriously, the fact remains that they are taking steps to secure a considerable increase in their wood piles. In June the exports of pulpwood showed a gain of about 150 per cent over the corresponding month, while in July the exports totalled 151,794 cords, an increase of 60,829 cords or 67 per cent over the corresponding month in 1922. Some of the American mills with affiliations on this side have ceased operations in the States so far as pulpwood is concerned and are drawing their entire supplies from Canada.

Ontario Market News

Although some lines of paper are showing slight signs of business improvement trade in the pulp and paper industry generally is not as good as was promised for this season of the year. It was anticipated that the end of August would see a reaction from the quiet period during the holiday season and that signs of good fall business would begin to appear. Only in a few lines does there seem to have been a recovery in the general conditions prevailing throughout the summer and late spring and jobbers, particularly, are complaining at the protracted quiet spell. Everyone in the business, however, believes that recovery is bound to come in the early fall and with it the paper trade will be back again to its accustomed stride. Just now, in most lines, small orders are the rule among the consumers of paper. Jobbers are not stocking up to any extent, for the printer and other consumers are only doing business with the jobber on a hand to mouth basis. The paper converting trade, also, is using less paper than it has for some time although there is a disposition to look for a good fall trade. Of course, the newsprint situation is extremely strong and all the mills are running full. Board mills, also, report a fair amount of business, which means that the paper box manufacturers are beginning to book more orders. Manufacturers of kraft and wrapping papers speak optimistically of the outlook and state that they are selling more goods just now than they were a month ago. Business has undoubtedly improved in these lines during the past ten days. On the other hand paper bag manufacturers report business as rather dull with a tendency on the part of distributers to book very lightly. None of the book, bond and ledger mills, as far as can be learned, are booked up any distance ahead and in some instances the mills are said to be running light, while some of the larger mills report that their output is keeping up to the average. It is generally admitted, however, that it requires greater effort to market these lines just now than it did a few months ago. There is only a fair call for card boards, blanks and blotting paper and the envelope trade is light in volume just now. Tissue and toilet paper manufacturers report a steady business with prices holding firm. Specialty and standard lines of tissues have had a fair sale during the summer and there has been a greater consumption this year than ever before in the specialty lines of tissue which has kept the mills busy through the summer months. In the raw stock market there are no changes to record. Prices of pulp are holding fairly firm but no stocks of volume appear to be changing hands. Groundwood is still quoted at from $38.00 to $40.00 and there have been no changes in chemical pulps from the prices quoted in these columns during the past two or three weeks.

NEW YORK MARKETS

New York, August 25 — (Special Correspondence) — As the fall draws nearer activity in the paper industry is steadily increasing. From all corners of the trade come reports of expanding business, of consumers enlarging the scope of their buying, of jobbers finding it necessary to place larger orders with mills, and of manufacturers speeding up their production so as to keep pace with the growing demand for paper of various kinds. The broadening of trade in paper is developing this year a little earlier than usually. Buyers, who apparently have the greatest faith in the stability of prices, are absorbing supplies freely, partly because they feel that paper costs are not likely to recede and partly because their requirements are increasing in a way necessitating that they secure larger amounts of paper to cover their wants.

Probably no other single factor is so indicative of the fundamental strength in the paper industry at present than is the prevailing situation in raw material. Nearly every kind of raw stock used by paper mills has witnessed an appreciable rise within the past few weeks. This advance in raw material price is believed to be the customary rise which occurs along toward the middle of September, and the fact that it developed sooner this year than ordinarily would seem to prove that paper mills are running at a better rate of normal than usually at this time. Wood pulp is firm, particularly mechanical pulp, which has scored a sharp advance in price recently. Cotton rags are on a much higher level than they were a month or so ago, while old waste paper is double in price of only a few weeks back. Obviously, the increased cost of raw stock has proportionately increased the cost of manufacturing paper and has served to stiffen prices of the finished product. Manufacturers in a majority of cases have held quotations on their product more or less stationary but it stands to reason that prices will have to advance if current high raw material levels are maintained, and it is probable that this outlook for higher prices is one reason consumers are so readily purchasing paper and board today.

Consumption of newsprint has started to climb again following the mid-summer lull. Shipments of print paper are moving forward from mills to consuming centres in heavy volume, and publishers are in numerous instances seeking additional amounts to augment their contract commitments. Prices of newsprint are firm. No one seems to be worrying about any change in quotations over the balance of the year since manufacturers have announced they will not alter prices, and price therefore cuts little figure in the present business in newsprint, consumers buying freely whenever needing supplies and meeting the rates quoted by mills without hesitation.

Book paper is gradually increasing in activity. Inquiry from large consuming quarters is on the rise, and mills are reported to be expanding their production to take care of the new orders coming in. Most book paper mills are well fixed with business, of both contract and transient character, and demand is developing in a manner promising a very busy fall season and a broad outlet for the remainder of this year. Machine finished book is quoted at an average of 6.50 cents a pound f.o.b. New York for the usual run of quality of this kind of paper, and a majority of mills are quoting above this figure, especially where transient buyers are concerned. Coated book paper is priced at from 8 cents a pound upwards.

Fine papers are in fair demand. Reports state that some of the writing paper plants in the Holyoke district which have been shut down because of a firemen's strike have resumed operations, non-union firemen having been put in the places of the strikers. Manufacturers in New England have moved the great bulk of their surplus stocks of fine paper during the past five weeks or since the strike of firemen was declared, and this branch of the industry therefore is in a stronger statistical position than in a long time. Prices are firm and the tendency is toward higher levels. Jobbers in New York report a growing demand from printers; one of the pleasing features being that orders are increasing in volume as well as in number.

Box boards are moving in larger tonnage. Since the strengthening of prices several weeks ago mills have been securing more business than when market levels inclined lower, emphasizing the fact that consumers are more willing to buy these days on a rising than a declining market. Board mills in the East are running at a good rate of capacity, and those in the Middle West are said to be enjoying an even greater demand for their product than prevails in the East. Quotations are well maintained at about $65 a ton f.o.b. New York for news board, and $60 to $62.50 a ton for plain chip board.

GROUND WOOD — Probably of all the various descriptions of raw material entering into the manufacture of paper mechanical pulp is at the moment in the strongest market position. This is due primarily to low water in mill streams which has appreciably reduced production of ground wood and thereby created a stronger demand, particularly from those consumers who depend on open market purchases to cover their wants. In numerous cases producers of ground wood who ordinarily have a surplus of pulp to sell are today looking for supplies. This is especially true of grinders in Upper New York State and in Wisconsin. Demand from such sources is brisk, and manufacturers having ground wood for sale have booked so large a tonnage of orders lately that many of them have now withdrawn offers and are refusing to commit themselves further excepting in cases where they feel obligated to keep regular customers supplied.

Canadian producers are reported readily securing $42 a ton and higher at pulp mills for all the spruce ground wood they care to sell for prompt shipment to consumers on this side of the border, with sales reported in exceptional instances up to $45 per ton. Domestic ground wood is quoted between $37 and $40 a ton f.o.b. grinding plants. Unless water conditions improve the probabilities are that prices will touch higher levels before the summer is over.

CHEMICAL PULP — Reports generally describe the chemical pulp market as rather quiet, it being stated that papermakers are buying merely to cover immediate needs and that most orders lack volume, yet proof is not lacking that in the aggregate a good movement of pulp is noticed. Certainly some consumers are purchasing in heavier tonnage than they usually do this early in the season, and indications

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WOOD PULP

SOLE AGENTS IN U. S. A., CANADA, MEXICO AND CUBA FOR

Finnish Cellulose Association
Helsingfors, Finland

AND

Finnish Wood Pulp Union
Helsingfors, Finland

are that big amounts of pulp are being delivered against back contracts.

The price tone is steady although now and then reports are received of sales of both foreign and domestic pulps at concessions, importers and dealers evidently being anxious to convert some of their stocks into cash. Signs are, however, that the great bulk of the pulp in so-called "weak" hands has been disposed of and transactions at less than recognized market price levels therefore are the exception. Quotations are on a rather wide range. Foreign unbleached sulphite of No. 1 grade is quoted at as low as 3.15 cents per pound ex dock New York and up to 3.40 cents, while Scandinavian kraft is quoted at 3.10 to 3.35 cents on the dock with some foreign kraft pulp recently sold to board mills down to 3 cents ex dock New York. Bleached sulphite is relatively in quiet demand but quotations are maintained, domestic No. 1 quality being quoted at 4.50 to 5 cents at pulp mills and imported bleached at around 4.50 cents on the dock.

RAGS — There has been a little sagging of prices in roofing rags this week in the New York market. Felt paper mills apparently have let down in their buying somewhat and dealers in their anxiety to do business have shaded prices No. 1 roofing stock has sold at 1.50 cents per pound f.o.b. New York, ,and slightly less in some cases, while No. 2 packing has been bought by consumers at 1.35 cents New York. Old white rags hold steady in price and are wanted in fairly large amounts, and thirds and blues are meeting with moderate demand at prices a little below the high levels recently prevailing. Dealers in New York quote 3 cents for repacked blues f.o.b. this city, and around 2.25 cents for miscellaneous packing. New cuttings incline to firm in price since reports were received telling of a resumption of operations in the fine paper mills in Holyoke as dealers look for a broader call for such rags shortly. No. 1 white shirt cuttings are quoted at 12.50 cents a pound f.o.b. New York, unbleached muslins at 11.25 cents, washables at 4.75 cents, blue overall cuttings at 8 cents, light silesias at 7.75 cents and fancy shirt cuttings at 6 cents.

PAPER STOCK — Low grades of old paper have continued to move downward in price whereas the high qualities hold comparatively steady; the market as a whole displaying less life than several weeks ago when an almost boom existed in waste paper. Probably the easiest grade at present is old folded newspapers, which some mills are buying at one cent per pound f.o.b. New York, with even lower prices reported. No. 1 mixed paper is selling at 85 cents a hundred ounds New York, common mixed at 55 cents, and box board cuttings at 90 cents. Flat stock has moved off a little in price. Dealers quote heavy flat magazines at 7.85 cents a pound f.o.b. this city, and crumpled book stock at 1.65 cents. Shavings are steady at between 4.25 and 4.50 cents per pound New York for No. 1 hard white, and 3.35 to 3.60 cents for No. 1 soft white shavings, and ledger stock also holds its own in price at 2 cents or higher f.o.b. New York.

OLD ROPE AND BAGGING — An improved demand for old manila rope is reported by local dealers. Paper mills are said to be still purchasing in a careful manner, ordering merely rope required for direct use, but several large consumers have evinced more buying interest this week and prices, while quotably unchanged, display a strengthening tendency. No. 1 domestic manila rope is quoted at 5.25 to 5.50 cents per pound f.o.b. New York, and foreign rope is priced at about similar levels. Old bagging is quiet though a fair movement to roofing paper mills is noted. No. 1 scrap bagging is quoted at 1.25 cents a pound f.o.b. New York, and roofing bagging at around 1.10 cents per pound.

WRAPPING FOOD IN PAPERS FORBIDDEN

Although on the civic statute books of Montreal for over eight years, a by-law prohibiting the wrapping of food-stuffs in newspapers or other printed materials is to be rigidly enforced from the health department, in both languages, instructing the citizens of its terms and of the intention of the officials to apply it without fear or favor.

The enactment in question absolutely forbids the use of newspapers, gazettes, books or pamphlets, circulars or any other printed wrapper for enveloping edibles. Papers may be used as outside binders, however, provided the food is previously encased in clean paper.

A fine not to exceed $40, or two months' imprisonment is the penalty provided for infraction of this law.

All persons handling food-stuffs, were notified that the authorities are instituting a vigorous campaign against disregard of this regulation, and that its provisions were to be strictly adhered to unless stringent action were desired.

NEWFOUNDLAND WOOD VIA SOREL

The steamer Bjornfjord, containing over 3,000 cords of pulpwood was unloaded at Sorel last week. She comes from Newfoundland. She is the twentieth vessel to be unloaded at the pulpwood conveyors built by the Quebec, Montreal & Southern Railway Co. at Sorel.

There will be several other large steamers of pulpwood coming to Sorel this season. The wood is piled for storage and is to be shipped, as called for, to the United States. There are already several thousand cords in storage. The Gwladys is on her way to Sorel with three thousand five hundred cords of the same kind of wood.

PRODUCTION EFFICIENCY LOWERS COST

An instance of reducing cost by increasing production is furnished by the Link-Belt Company which has lowered its price for their small portable loader to $550 each. The first reduction made possible by increased production was one of 16 per cent. or from $700 to $585. Each conveyor is equipped with a two or three phase 60 cycle motor, and raising and lowering mechanism. They are certainly very handy little machines for unloading coal, lime, lime stone, sulphur, etc.

Mr. W. L. Ketchen, who has been chief engineer at the Kipawa plant of the Riordon Company, has taken a position with the Whalen Pulp & Paper Mills, and will be located at their Port Alice plant, B.C.

Pulp and Paper Magazine
OF CANADA

A Weekly Magazine Devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades

VOL. XXI. GARDENVALE, Que., September 6th., 1923 No. 36

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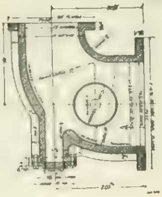

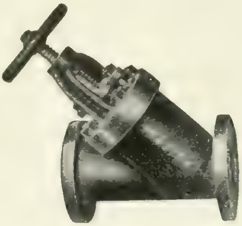

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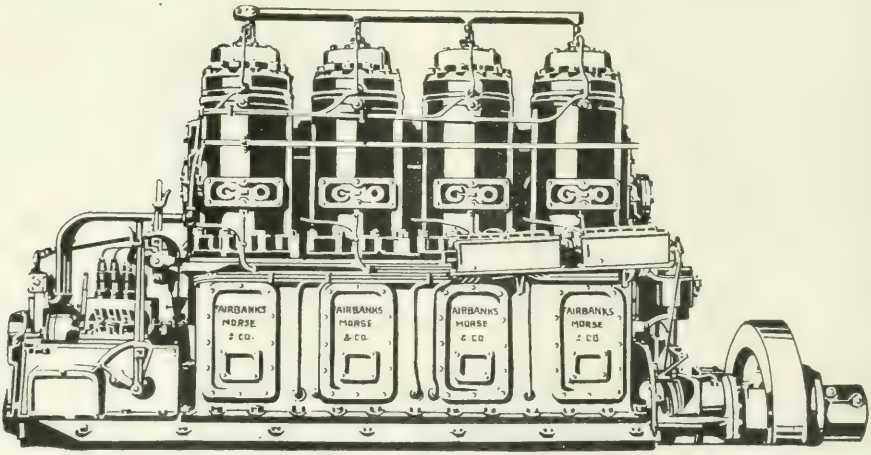

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:-: EDITORIAL :-:

EMBARGO WILL CREATE EMPLOYMENT

A pulp mill in operation is an interesting, busy place, and there is usually a busy little village supported by the wages paid the employees. Even a small groundwood mill is a considerable affair when one considers the benefits it brings to the neighborhood in which it operates. The matter of employment is not merely local, but the wages spent for the necessities of life or the materials to build a home are distributed near and far, bringing business and profit to the farmer, manufacturer and merchant.

The manufacture in Canada of the pulpwood now exported would support ten new towns of 1,000 to 2,000 people, and would, of course, add largely to the value of Canada's exports. Made into pulp, a cord of wood increases from two to four times in value. As a Canada-building, employment-giving measure, the embargo on pulpwood stands high. This aspect of the matter should be an important factor in the deliberations of the Pulpwood Commission. It is reported that the commission will hold at least one hearing in each province interested in pulpwood matters. At that rate it should take just about a month for the commission to get a fair idea of what a number of people think about the situation. But can they be sure of getting an honest opinion from people who **know** the situation and who will speak in the best interests of the country and not from selfish motives? Will the commission take the trouble to go into the woods, or fly over the forest and see things for themselves? Unless they will do this, their judgment is likely to be swayed by those who may be heard for their much speaking.

And when they have heard, let them remember that there once came from Quebec the statement of the then Prime Minster that not only should pulpwood be hindered from going out of the country, but might even be kept for manufacture in the province.

$300,000 INVESTMENT IN DANGER

Unless action is taken, and taken promptly, we, the people of Canada, will lose, quite unnecessarily, the benefit of the $300,000 invested in the peat experiments during the last four years. This money has been expended wisely, in a well conceived and cleverly executed series of experiments designed to develop a mechanism that will convert raw peat, containing only 12 per cent. combustible matter, into a high-grade fuel. The engineers directly concerned are satisfied that they have developed a commercially feasible process, and the officers of the Departments of Mines in Toronto and Ottawa are likewise convinced that cheap peat fuel is now available, if we will take the pains to make it. The general public are still, however, almost completely unaware of the truth about the present situation of peat fuel manufacture, and investors still look upon the demonstrated facts and figures as "too good to be true."

"While there may be some doubt as to the results achieved [by the Peat Committee], your Committee is of the opinion that the money expended was justified, and that the Governments interested should consider the advisability of making still further efforts to more fully demonstrate the feasibility or non-feasibility of producing a suitable peat fuel for domestic or industrial purposes, which will compete successfully with other fuels now in use." This is the conclusion of the Senate Committee on Fuel Supply, contained in its final report made on June 25th. The Peat Committee and its work have had much active opposition and numerous detractors, and their evidence has resulted in the Senate Committee's mild expression of doubt. Their conclusion is without doubt — that the work should be carried to a final conclusion.

The Quebec government has offered a bounty, at a rate still to be determined, for peat fuel made in the province. The Ontario government has done nothing to protect its investment.

The idle peat plant at Alfred, Ontario, can be had for the asking by anyone with the means and a *bona fide* intention to operate it; a recent order-in-council passed at Ottawa says so. It is worth $50,000 as it stands, and a moderate sum will change it from the cumbersome steam-driven mechanism it is at present, to the electrically-driven plant the Peat Committee recommend for commercial operation. This plant cannot be moved economically to a bog in Quebec, where it would earn a bounty. If it is to be operated during the season of 1924, active steps must be taken before the snow flies to get it ready.

If private capital should fail to meet this need within the next few weeks, it is clearly incumbent upon the Ontario government to fill the breach. Under the impulse of war-time necessity a Conservative government undertook the experiment. During the last days of the succeeding government, the effort was allowed to lapse. The newly elected Conservative government has professed a keen interest in the mining industry.

Here is a chance for it to fulfil these professions in practice, and to complete the task begun in 1919 with the personal support of the present Premier.—W. M. G.

CONSOLIDATE FOREST LAWS

The Halifax Chronicle recently gave voice to some constructive suggestions along a line that has already been recommended by the Pulp and Paper Magazine. The Chronicle says:

"The necessity for some definite, co-operative plan of conserving Canadian forests is already being felt by those who are giving adequate thought to the preservation of our natural resources. The matter was seriously considered at the British Empire Forestry Conference, and E. H. Finlayson, acting head of the Dominion Forestry Department, offers a practical suggestion. He proposes a conference of Dominion and Provincial Forestry Departments or authorities for the purpose of outlining some plan to harmonise the administration of forests throughout the Dominion.

"It might not be an easy task to co-ordinate the forestry regulations of all the Provinces, but a beginning might be made. On one point at least, unanimity might be brought about very easily. In every Province where sections of Crown Lands are indubitably forest lands, they should be held as that, and never given over to settlement. Moreover, equally stringent regulations might be enacted concerning cutting of timber in respect to size, age, etc., and to reforestation. This would be a decided step in advance. The next one would be providing for adequate fire protection and for the clearing up of slashings.

"There must be some method that could be made effective against the ravages of fire. The loss through fire, due mainly to culpable negligence, is really too heavy to be borne uncomplainingly. The present generation is merely custodian of natural wealth for the next generation, and every succeeding generation is in exactly the same position. This allows of use of such wealth, but precludes abuse of it. A full realisation of this stewardship would go far to prevent careless fires, or cutting without replanting. It is essential that public opinion be educated up to a realisation of public responsibility. Without public sentiment nothing can be done; with it nothing can fail."

COBWEBS

The financial papers have been pointing out the large advantage to paper mills of only a small premium on American funds. With exchange at 2 per cent. and newsprint at $75 the advantage on sales of this grade alone to the U. S. A. would amount to $1,500,000 in one year.

When Senator Moses of New Hampshire holds up the scare-crow of an embargo on anthracite coal in retaliation for further restrictions on the export of Canadian pulpwood, let him look out lest he get a shock by finding out that Canada has a lot of hydro-electric power possibilities in her trunk.

The whole world is stunned by the heart-rending reports of the awful disaster that has befallen Japan. The effect will be felt in Canada, not alone in the anxiety of many relatives and friends in this country and an out-pouring of such help as can be given, but also in a business way. On another page is a report from Japan that money is tight over there and it is certain that the humanitarian needs of feeding the hungry and building the waste places will get the funds required before business is even thought of.

The Laurentide Company has taken a step to maintain the strength of its directorate by adding the name of Sir Vincent Meredith, president of the Bank of Montreal, in the place of the late R. B. Angus.

Other important items in the Laurentide report are the Employees' Pension Fund of over $500,000 and the purchase by 580 employees, of $169,329 of the Company's stock. The strength of a concern is not altogether in its material possessions.

Visit the Pulp and Paper booth, number 489, at the Exposition of Chemical Industries, New York, Sept. 17-22.

MACKENZIE RIVER MAPS

The Mackenzie river, the largest of all Canada's water systems, does not present to the traveller today the difficulties and dangers of former times. Tapped by railways at two points and traversed by up-to-date steamers, the waterways of which this river forms a principal part may be travelled to the delta of the Arctic ocean in all the comfort and security that attends inland water transportation.

With the increase in interest in this district that has been brought about by recent oil and other mineral discoveries, as well as from the general enlightenment regarding it that has seemed to pervade the older parts of Canada in the past few years, the need for accurate and authentic information in the matter of surveys has been felt. To meet this need, surveys have been carried on by the Topographical Survey of Canada, Department of the Interior, along the main waterways of the district, since 1921 and are being continued this year.

As a result of these surveys, a series of thirteen maps of this district has been issued embracing besides a general large scale map of the entire area, detailed maps of the lower Athabaska and Slave rivers, Lake Athabaska, Great Slave Lake and the Mackenzie river They are printed in three colours, each map being 24 inches by 34 inches in size. In addition to the outline of the waterways themselves, they show all islands and shoals, the navigation routes usually followed, magnetic variation at various points, the positions of the survey monuments erected and in general all known information relating to the topography of the country.

Weighing Wood in Pulp Manufacture

B. S. Summers, Port Huron Sulphite & Paper Co., Port Huron, Mich.

For several years it has been the habit of the Port Huron mill to pile wood neatly in piles 8 ft. high. As the majority of wood purchased is in 4-ft. lengths, it is easy to ascertain the number of standard cords used in a given run. At the end of each week the consumption of the week is accurately determined. In this paper the word "cord" refers to a standard cord of 128 cu. ft.

The wood is usually drum-barked, and subsequently knife-barked to insure a high grade of cleanliness. In using the term "barking-loss," I refer to the total loss of wood by weight between the weight of the rough wood and the weight of the moist chips.

The chip bins are individual bins, holding just enough chips to charge one digester, and contain substantially 4,100 cu. ft. The chip bins are always loaded to a mark, so that a digester always receives the same volume of chips. The digesters are 10-ton Mitscherlich digesters.

The outrun of each day is run over driers and the air-dry weight ascertained. There is a clean-up at the end of each week, so that the air-dry pulp manufactured each week is accurately determined.

It has been noticeable for a number of years that the weight of dry pulp produced from a given quantity of wood varied over a considerable range, notwithstanding that the wood used was quite constant, as nearly as could be determined by physical inspection. Not only did the weight per digester fluctuate greatly, but the output per week fluctuated, and the output per cord of wood fluctuated.

It has also been noticeable that, during certain portions of the year, the output was better than during other portions of the year, the lowest yields being experienced during the winter months.

Cause of Unusual Variations

As there was no explanation of these unusual variations, the management decided to endeavor to ascertain the cause of these variations. In order to do this a platform scale was installed and as the logs are drawn to the mill by wagons it is a simple matter to get a very fair weight of the rough wood consumed. A chip weigher was also installed and the chips were automatically weighed as they were introduced into the digesters.

In order to ascertain the amount of water in the wood, rather extensive experiments were made on moisture determinations. These investigations resulted in the adoption of the kerosene distillation method for determining the moisture. The sawdust from the rotary screen was selected as the most representative part of the wood for reliably ascertaining the moisture. It was soon discovered that the kerosene distillation showed a larger amount of moisture in the wood than by drying the chips, and was considered more accurate.

When the proper deduction was made for the water in the wood, from the weight of the wet chips, the amount of pulp-making material introduced into the digester was quite accurately ascertained. With these data in hand, the losses between the wood pile and the air-dry pulp could be equitably distributed between the log room and the digester department.

It was soon ascertained that on comparing weeks where the barking losses were substantially the same, different yields of pulp resulted. At first this variation was regarded as due to fluctuation in the quality of the wood, but further investigation showed that the make-up of the acid had a large influence in these results. When I use the term "yield," I refer to the percentage relationship between the air-dry pulp, and the bone-dry chips producing it.

Furthermore, it was apparent that the analyses of the acids as generally practised, gave only partial information as to the digesting quality of the acids. This led to an extended investigation of the sulphite acid, and as the technical make-up of the acid is beyond the scope of this paper, only the results obtained will be mentioned.

Variation in Rough Wood

Referring now to the rough wood delivered to the mill, it was found that the weight of a cord of rough wood varied from 3,065 to 5,570 lb., the former being wood three or four years old, containing 18 to 20 per cent moisture, the latter being water-soaked wood, running from 45 to 50 per cent water. The former showed signs of decay, while the latter was sound wood. It should be understood that these figures refer to spruce wood, with a sprinkling of balsam.

It will probably be sufficient for the present to state that sound Canadian spruce, heavily watered, will frequently run over 5,000 lb. to the cord. New cut wood, running from 20 to 28 per cent moisture, weighs about 4,500 lb. to the cord, while old wood, with only incipient decay, but quite dry, running from 20 to 25 per cent moisture, runs from 3,200 to 3,700 lb. to the cord. However, the general run, over a year, of good sound Canadian spruce, will average quite close to 4,000 lb., and the moisture content will average around 30 per cent.

Coming now to the barking loss, that is the loss from the rough wood to the wet chips, a wide fluctuation is experienced, when knife-barkers are utilized. Carefully done drum-barking either wet or dry, will run from 12 to 15 per cent. Woods hand-barked with draw knives, and trimmed with axes, will run between 16 and 17 per cent. When the wood is knife-barked, either from the drum-barker or from the rough, and carefully cleaned, the total loss varies anywhere from 20 to 38 per cent.

It soon became apparent that the number of logs

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* Presented before Woodlands Section, American Paper and Pulp Association at the annual meeting April 11, 1923, New York.

making up a cord was an important factor in the barking loss. To ascertain this automatic counters were installed on the conveyors. Here, again, a wide fluctuation was noticed. The number of logs from a cord varied from 90 to 170. The average run of Canadian spruce, as it comes to this mill, will be from 130 to 140 logs per cord, with 4-ft. wood.

With these figures before the management, steps were taken, first to see what could be done toward cutting down the barking loss, which with small wood usually ran above 30 per cent. By regulating machinery, and organizing the help that operated the machines, it was found that the barking loss could usually be maintained at from 20 to 25 per cent.

It is apparent that, in those mills using drum-barkers alone, the main losses are occasioned in the digesting of the wood, as, unless the wood is unusually bad, there is no such wide fluctuation noticeable with drum-barkers.

We have not endeavored to study the losses between the cleaned log and the chips, as they are minor quantity.

Fluctuation in Weight of Wet Chips

When these surprising figures were brought forth, the yield of pulp from the chips was given exhaustive attention. It was found that a digester of wet chips, no matter how carefully measured, would fluctuate from a minimum of 46,000 to a maximum of 70,000 lb., and that a digester of bone-dry chips would fluctuate from 34,000 to 41,000 lb. It was also noticed that the wet weight of wood was only partially affected by the amount of moisture. In many cases, new cut wood would give a dry-bone weight higher than an older wood, running high in moisture Nor was it always the case that digesters, containing the greater amount of bone-dry wood, would yield the greater amount of air-dry pulp. As no specific gravity determinations were made, it is impossible to state whether the yield is proportional to the specific gravity or not.

The results, however, indicated rather strongly that water-soaked wood yields better than dry wood, for the same wood, and the quantity of the pulp is excellent.

In the early stages of these investigations, determinations showed that the yield of screened pulp from the bone-dry chips was about 45 per cent, while the total pulp was between 47 and 48 per cent. After the investigation of the acid had produced methods of modifying the processes, the yield of screened pulp increased to 52 to 56 per cent, while the total pulp increased from 55 to 59 per cent. The average of screened pulp for a considerable period, has now been around 53 per cent, while the total pulp is around 56 per cent.

If these figures are translated into money values it would seem that the results obtained fully justified the expense of weighing. The old saying is, "What you don't know never troubles you," and it is only when a large loss stares you in the face that herculean efforts are put forth to prevent them.

If a mill using 18,000 cords of wood can save 10 per cent on its barking loss, a saving of approximately $22,000 is possible. If the mill normally produces 10,000 tons and if the increase of 10 per cent of pulp is made from the same wood, this saving is practically all profit, as the expense of producing this increased quantity is a very small amount over the normal expense. In such a case the saving would be 1,000 tons of pulp in a year. If the pulp is taken at $60, that would mean $60,000. If a high-grade pulp is manufactured that would mean over $80,000.

For fear that a misunderstanding might arise, it should be stated that the resultant pulp was much purer, of higher color and quality than was produced with the low yields. The pulp ran from 94 to 96 per cent cellulose, with only about 2 per cent lignin, and this Mitscherlich pulp has been bleached with a consumption of from 12 to 16 per cent.

Checking the Results

In order to check these results, small pot experiments were made with both open and closed pots, which were cooked inside the large digesters, and the small, accurately weighed determinations checked those on a large scale, so it is with considerable confidence that these figures are presented.

It is recognized that in weighing large quantities of wood errors are bound to creep in, due to fluctuation in tare and personal errors. It is also recognized that in weighing chips automatically, in a continuous stream errors will arise, but the law of averages considerably decreases these errors, and where the weights are taken at all stages of manufacture, weights at one stage of the processing which are out of line, are made apparent by the other weights taken at the different stages.

It should not be amiss to say a few words as to the efficacy of intermittent tests as a basis for costing. It is known that the efficiency of manufacturing processes varies in the best of regulated factories, efficiency varying from a maximum to a minimum. The divergence between the maximum and the minimum, however, is considerably decreased where costs are obtained every day. The knowledge of the weakening in any step of manufacturing immediately causes corrective steps to be applied. In the case of intermittent tests, ignorance promotes confidence, with the result that considerable losses occur, without the knowledge of the management. A figure is obtained by a test or several tests. This is accepted as reliable. The manufacturing proceeds on this basis. Conditions change, and processes gradually become more inefficient, as no data are available to check results.

An Illustration in Modern Power Plant

An illustration of this is in the modern power plant. Before the days of automatic coal weighers, flow meters, and the modern instruments of the power plant were introduced, the generation of power, even with cheap coal, was much more expensive than it is now. Any one visiting the modern central station is immediately struck with the money invested in apparatus to determine daily costs. I recently asked the general manager of a very large power company if it were not a fair statement that, with these power stations today as they are, if he discarded the apparatus that gives this daily information would not the cost of power increase at least 20 per cent. He replied that he thought that was a very fair statement. In fact, he thought that the power cost might even increase more.

Having knowledge of these facts from actual experience, the management of the Port Huron mill determined to get weekly records, which would determine inefficiency with a fair degree of accuracy. Mr. Kiefer, the president of the concern, was determined to weigh his chips. When this feat was accomplished and the result obtained he regarded it as a mile-stone in the progress of the industry.

Wishing to avoid pioneering a survey of the weighers on the market was made and it was a collective judgment that no weigher on the market was particularly adaptable to this purpose, and no guarantees could be obtained. The chief difficulty met was due to the fact that the chips were delivered to the weigher in varying quantities and the lack of uniformity in the flow of chips was most marked. The weigher to be successful must be entirely automatic, must require little attention, and of necessity is placed at a point where it would receive little attention. It must work in moisture and dust and must have as few working parts as possible and preferably must be driven by gravity acting on the chips.

For this reason we decided to build our own weigher, which was done. While undoubtedly improvements will be made as more machines are built the first machine we built was successful and was used under very trying conditions, due to the fact that the chips were delivered to the weigher from a vertical elevator, receiving its supply from a pit. The chip stream varied from almost nothing to a deluge. This, of course, made the cut-off arrangement very difficult to accomplish. Notwithstanding these handicaps, it was found that when the stream of chips was controlled within any reasonable limits, an accuracy could be obtained within about 2 per cent. Had the weigher been built larger undoubtedly the error could be kept below 1 per cent.

The principle involved is simply alternate pockets, fed by a shifting pan, which is worked by gravity, which likewise opens and closes the dumping doors.

"Passing the Buck"

One result from using instruments for indicating daily costs is the prevention of the great interdepartment American game known as "passing the buck." When you go into a combined pulp and paper mill, if anything goes wrong with the paper, it is always the pulp. When the pulp is chased down through its several departments, the buck usually lands on the wood pile, and unless the yard foreman can chase it back to the forest and nature, it will have to remain there.

Now, while it is a fact that the quality of wood in making pulp is an important item, outside of the yield of pulp, the difference between pulps made from different qualities of wood, does not vary as widely as the woods from which they are made. I have had a very striking illustration of this. In two mills making the same ultimate product, one had very much better wood than the other. The processes were strikingly similar. When the processing was properly adjusted in the mill having the poorer wood, the differences in the quality of the product practically disappeared. Of course, this does not apply in comparing different species of wood.

Returning, therefore, to the tendency of one department to throw the blame on the other, experience has shown that it is very difficult to properly place the responsibility, without the proper apparatus for giving data. This is particularly true as regards yield rather than quality. This point is further made important when dealing with poor wood. What wood to process and what wood not to process is a matter of delicate judgment and experience. With the proper apparatus it is not a matter of judgment and experience at all. It is a matter of cold fact.

I could weary you with citations from other industries, which formerly ran on the judgment of practical men, but which now run on actual data obtained by instruments or apparatus. If this is true in other industries why is it not true in the paper industry? And if it is true for the paper industry why not go as far as the other industries? Why should we not weigh the wood into the mill, determine how much moisture it carries, determine the loss in weight between the logs and chips, determine the loss in weight between the pulp and paper, instead of depending upon the aggregate of figures obtained from the general ledger? Weighing the chips has shown that wide divergence exists between the weights of digesters, both in the amount of chips required to fill the digesters and the weight of the pulp obtained.

Many mills have shown considerable saving in recovering pulp from white water. As an illustration, if the industry was as well developed as some of the other industries, and it was known that a 6 per cent loss between pulp and paper was good practice, and you installed apparatus that showed you were losing 10 per cent you would make strenuous effort to improve your practice. Likewise, if you were buying wood, and processing it so that you were getting 40 per cent of air-dry pulp from bone-dry chips, and you knew another mill was getting 56 per cent, you would do something in your wood department or in your mill that would cut down the difference, and you would be willing to spend money to do it, because you would get handsome returns on your investment.

Sharper Competition

Why, not, therefore, borrow a lesson from other industries that have progressed further? You are emerging from a period of plentiful raw material and a market that was fairly easy picking to a period of scant raw material and facing a market where foreign invasion tends to sharpen competition.

It may seem that a figure of 56 to 58 per cent yield of air-dry pulp, from bone-dry chips is chimerical. I, therefore, wish to say a word or two about cellulose. It is not until within the last five years that the chemist identify of cellulose. Thanks to recent investigation, we are getting near to the solution, but there is yet much to be known. It is sufficient here to say, however, that cellulose, as reported to you by your chemist, is really an arbitrary entity, and in common language is nothing more than a residue left after a certain treatment devised by two eminent English chemists, Cross and Bevan. Other methods have been devised, but are not satisfactory. There is no proof that this residue represents all the cellulose in the wood, and science may yet prove that Cross and Bevan's residue is low.

This is true of most of the other determinations usually made on pulp, but the point I wish to bring out here is that sound spruce wood will run from 56 to 61 per cent cellulose by this method. If you are making a very high grade pulp, it is probable that it will contain over 95 per cent cellulose, and when you consider that your air-dry pulp is figured on 10 per cent of water, you can count about 85 per cent of cellulose in air-dry pulp for the best of it, and many pulps contain only about 80 per cent.

If, therefore, you are processing a wood of 56 per cent cellulose, you have a right to expect something over 65 per cent air-dry pulp. If you were obtaining 58 per cent air-dry pulp, your processing is a little under 90 per cent efficient. A chemical process which is approaching commercial efficiency should be 90 per cent efficient without boasting the impossible.

In this regard I want to quote a little card, which I removed from the office of one of my friends, reading: "It is generally the man who doesn't know any better who does the thing that can't be done — You see, the blame fool doesn't know it can't be done, so he goes ahead and does it."

The presentation of these figures, it is hoped, will lead to serious reflection on the part of mill owners on the possibility of saving.

Summarizing the Advantages

To briefly sumarize, the advantages of weighing wood in pulp manufacture are:

First — A good indication of the quality of wood purchased

Second — The location of the chief loss in manufacture, as between departments.

Third — The stimulating of research and efficiency of management to save losses.

When wood consumption is simply taken on the amount of wood it takes to fill a digester in chip form, and the pulp slushed to the paper mill connected with the pulp mill, and the production estimated from the paper produced, a hopeless problem confronts the management that is seeking to cut down its losses.

RIORDON REORGANIZATION PLAN

It is understood that the Riordon reorganization plan, which provides $10,000,000 of new capital for this enterprise, has been underwritten by a syndicate of banking houses, including Parkinson & Burr, Coffin & Burr, Inc., and E. H. Rollins & Sons, all of Boston, Mass., and Royal Securities Corporation, Limited, of Montreal, and associated underwriters, to the extent of $8,000,000. Underwriters are understood to include many of the most prominent pulp and paper and lumber operators in Canada, and a considerable amount of English capital has been forthcoming in support of the reorganization.

It is further understood that negotiations which have been taking place during the last few months between the various banking houses interested in the reorganization committees of bondholders representing the 8 per cent. first mortgage, and 6 per cent. general mortgage bonds, and creditors of the company, have reached a point where with a few days' time a definite reorganization plan will be announced.

Riordon has over 5,000 shareholders in Canada, the United States and Great Britain, most of whom still retain their original investment in the company's securities, so that it will be readily understood that the announcement of the reorganization plan is looked forward to with more than usual interest.

BELGO NEEDS MORE GROUNDWOOD

Announcement has been made that the Belgo Canadian Paper Co. will construct two additional groundwood machines at its plant at Shawinigan Falls. This extra pulp capacity is necessary to feed the paper machines which are producing beyond the expectations of the company's officers. The machine that was recently erected was rated at 75 tons per day but is actually producing 96 tons per day and it is anticipated that the next machine to be built will also produce above its rated capacity. This gives the company an additional production of 40 tons per day and the mill with the new equipment will probably produce 400 tons per day instead of the 370 tons or so that have been counted on.

NEW MACHINES

(From a statement by the News Print Service Bureau)

Started in 1923

Company	No.	Make	Size	Tons	Month
Ft. William . . .	1	P. & J.	196	80	January
Washington . . .	1	B. & S.	164	60	January
St. Lawrence . . .	1	D. E.	164	60	February
Belgo	1	Walms.	232	85	February
Ft. William . . .	1	P. & J.	196	80	April
St Lawrence . . .	1	D. E.	164	60	May
Total	6			425	

To Start in 1923

Company	No.	Make	Size	Tons	Month
Oswegatchie . . .	1	B & S.	164	50	July
Bathurst	1	Walms.	160	50	August
Algonquin	1	B. & S.	204	80	August
Consolidated . . .	1	Beloit	160	65	September
Belgo	1	D. E.	232	85	November
Kenora	1	D. E.	234	100	December
Total	6			430	
Grand Total . .	12			855	

To Start in 1924

Price	2	Walms.	234	200	January
Donnacona	1	Walms.	234	100	January
Ontario	1	R. B. & F.	204	80	(?)
Bathurst	1	Walms.	160	50	

MATTAGAMI IMPROVING MILL

The Mattagami Pulp and Paper Company's plant at Smooth Rock Falls, Ontario, is reported to have been operating at capacity during the past month, with a production of 4,000 tons of unbleached sulphite. A number of improvements and installation of new equipment are now under way at the mill.

Felts: Their Efficiency And Life*

By MR. F. W. VICKERY, O. B. E., M. I. M. E.

In the pulp, paper, board and kindred trades, felts are put to a number of uses, and the requirements for one use as compared with another, may vary considerably. It follows, therefore, that it is possible for a statement to be quite applicable to one set of conditions and yet be wholly inapplicable to another. An example is seen in the case of nap, the presence of which is vital for some uses, whereas for others its absence is just as essential. Again, some felts have to be capable of submitting to the process known as "roping" for cleaning purposes, while with others such a process would not be possible.

I am certain, therefore, that little, if any, useful purpose will be served unless we recognise the position as it exists.

In order to minimise the possibility of the question being viewed from standpoints which have little or nothing in common, I propose to restrict my remarks to paper-making in the strict sense of the word and to avoid extremes. The felts I shall deal with will be wet felts on Fourdrinier machines, and during the early part of my paper I shall assume that there is no felt cleaning or washing apparatus in use.

It was my original intention to trace the history of a felt from the wool on the sheep's back to the time when, at the end of its papermaking career, it enters domestic circles and becomes a carpet, or, at the hands of the thrifty mother, overcoats for the twins. I found, however, that a three volume book would be required rather than a paper of an hour's duration. I am compelled, therefore, from lack of time, to pass at once to clothing the paper machine with a felt.

Choosing the Felt

To choose a felt intelligently it is necessary to have in mind the functions it has to perform. Its first function, it appears, is that it should act as a transporting band; its second, that it should be a willing absorber of water from the paper before the nip is reached; its third, that it should be a willing channel through which water can pass at the point of the nip; and its fourth, that its face should be a guard against felt marks. There are, in addition, other points, as, for example, the life of the felt, its dirt resisting qualities, its ability to withstand the effect of roping and the effect of washing off the machine, etc.

I remember asking a papermaker, on one occasion, for his definition of the ideal felt. Put broadly, his reply was that a really good felt would be one that would last as long as a drying cylinder and require no more attention; that would never interfere with the production of good paper, or get dirty, or change its condition, or wrinkle, or run ashore or out of square. He thought, however, that the machine-man would be satisfied if the felt never required washing until the next shift, or changing until the week-end, and that if, in addition, felt-changing was always a job for overtime, the ideal of some machine-men might be reached.

There is no difficulty in coming to the conclusion that not only is it impossible to satisfy the requirements of the idealist, but that, also, the science and practice of felt making have not reached such a stage that in the one felt the same efficiency can be given to four distinct attributes, each, in fact, diametrically opposed to some of the others, that could be given if each of these attributes could be gained independently of the other. Consequently, a compromise giving a fair over-all efficiency is the most that can be looked for. In the past, papermakers have not always appreciated that in insisting upon prominence being given to one or more of these attributes, something has had to be sacrificed by the felt-maker in the others.

A wet felt is one of those articles, which, by reason of the material from which it must be made, defies standardisation. The felt-maker cannot do more than gather together from various parts of the world wools possessing different peculiarities. He cannot, for example, give to his fine wools the strength of those whose peculiarity is strength without fineness. Consequently, when he is told that the felt must not mark the web and must be a good absorber, he is not free to supply a closely woven felt of fine wool, for the papermaker still expects the felt to be strong enough to act as a transporting band and open enough to act as a channel. The most the felt-maker can do is to blend his wools that each attribute of the felt has a proper share of the total efficiency of the felt as a whole. But, in so doing, he has had to take something away from the quality of fineness in order to give it to strength and openness.

It is possible that the day will come when the felt will be merely a porous transporting band, alternately picking up and relinquishing a covering to act as an absorber and a guard, on which the web will be carried through the press.

In my consideration of this subject this evening, I am assuming that the paper machine is equipped with a felt, the best that modern science and practice can produce, the attributes of which are well balanced and have the maximum efficiency present knowledge can give.

From the moment a felt commences to make paper there is a gradual, but continuous and cumulative deterioration of its qualities as an absorber, a channel and a guard, until eventually it reaches such a condition that either the product falls below the lowest standard acceptable or the machine cannot be run satisfactorily. From the very first, every turn of the felt has contributed to this condition. Actually, therefore, the felt commences to become what it is the practice to describe as "dirty" from the time it begins its work, and either the paper it is helping to produce is correspondingly affected or the difficulties of manufacture are being increased.

While the deterioration of the paper may be slow, the change brought about is nevertheless discernible to an expert after a certain length of time. Up to a point however, a felt starting up clean can be run without the deterioration being such that it need be taken into account. The period up to this point I will call "tolerance," and for the purposes of this paper, I propose to regard the felt as "clean" during this period of tolerance, which it may be mentioned, depends upon a number of factors, such, for example, as the speed of the machine. My investigations show that the tolerance varies from thirty minutes upwards.

The Problem of Constancy

Disregarding for a moment the enormous loss resulting from stoppages for felt cleaning and felt changing and the liability to damage consequent upon handling the felt, I do not think any papermaker will maintain that such variable factors should be allowed to remain in the art of papermaking, in which constancy is important in the highest degree. At present the felt is the greatest disturber of constant conditions. To borrow the words of one well known in the trade, with which, speaking generally, I agree: "At the moment the engineering side of the industry has outrun the science of papermaking." I would add the opinion that the felt is the weak link in the means employed for papermaking and is the most restraining influence upon progress. The question which naturally arises, therefore, is how can more constant felt conditions be obtained? Is it possible, for instance, to produce a felt capable of remaining in a constant condition throughout its life, or even capable of remaining constant for such a length of time that the papermaker can afford to scrap it when the quality of constancy has been lost? My answer is a decided "No."

I commenced to give attention to this question as far back as 1909, and I have been fortunate in that I have been able to study it not only here but in America, Canada and the chief papermaking countries of Europe as well. By 1914, I had made considerable progress and had obtained some interesting and valuable data, from which I had to form the opinion that the solution was to be found not in improvements in the felt itself, but in submitting the felt to an operation which would counteract the deterioration caused in the performance of its work, including the milling action of the press rolls.

Two points of outstanding importance, brought out very forcibly were:—

(1) That the deterioration was not due to dirt entirely.

(2) That any operation performed on the felt for the purpose of keeping it as near constant as ordinary wear would permit, would be of no avail if the felt was once allowed to get out of condition, and that this operation, to be successful, would have to maintain the felt in a state of constancy.

I had clearly before me, therefore, the fact that the apparatus used would have to be capable of operating on every thread of the warp and weft of the felt within a period less than the tolerance to which I have alluded. as this question of tolerance is one of the foundation stones upon which my structure is erected, I will ask you to bear with me for a few moments while I deal with it in a rather elementary manner. For, unless there is a proper understanding of my point, the importance of my subsequent remarks may be missed.

Let me say first that perfection is impossible of attainment. What is generally regarded as perfection is merely an approximation, and, commercially, the expense of working up even to the generally accepted meaning of perfection is prohibitive. A realisation of this axiom has brought into existance a system, which, in the engineering industry, is known as "working tolerances." The same system operates in some measure in many other trades, and it is nothing more or less than an acceptance of the truth that in industrial life perfection cannot be attained and that within recognised limits it is not required. So important is this system, that it has been found necessary to apply it not only to the product itself but even to the instruments used to measure the "tolerance." Consequently, gauges, the highest standard of commercial perfection, used to measure "tolerance," are themselves subject to it.

"Tolerances" are measurements of distance, quantity, time, or some other factor, and are denoted by two sets of figures, one of which is known as the high limit and the other as the low limit. The amount of tolerance that can be allowed with safety depends upon the work of the article produced has to perform. In some cases there can be a wide margin; in others, only a very narrow one.

I have mentioned already that my investigations led me to the conclusion that a properly conditioned felt would have to be maintained in that state. It was not long, however, before I recognised that absolute perfection was not feasible and that I was at liberty to employ this well established principle of "tolerances." In my application of it, I have made the tolerance one of time, which, it should be said, varies according to the paper being made and the conditions.

A good many years have passed since I formed the opinion that the problem could not be solved by the feltmaker alone. During this time, undoubtedly, improvements have been made, and felt makers have undertaken much research work, but up to now nothing has developed to cast even doubt upon my theory. I am not sure, however, that British felt makers have shouldered their share of the burden, or that they have given to the papermaker help to the same extent as have some of their brethren abroad. I wonder how many felt makers in this country have, for example, a standard of porosity for their felts and are able to give the papermaker definite figures as to the porosity of felts of the various types and makes they produce.

In 1919 I resumed my investigations, and eventually I was able to prove that it was possible to keep a felt in a constant condition for papermaking, allowing, of course, for ordinary wear; that, as a result, wear of the felt was reduced, and the same exacting requirements were no longer necessary, the disturbance by the many small points which went to make a felt unsatisfactory being neutralised.

Cause of Deterioration

Before I proceed to describe the means I employed, it may be interesting if I examine the cause of felt deterioration. The theory generally accepted is that the pores are filled by the accumulation of dirt left behind by the web of paper. There is, of couse, some truth in this, but it is not the only cause. That dirt alone is not responsible, is, I suggest supported by the fact that although every particle of dirt may been removed by washing, a felt will not run as long the second time on the machine as the first, or as long the third time as the second. If it were merely a question of getting the dirt out of a felt, there is no reason why, conditions being equal, the second run should not be as long as the first, and the third as long as the second. But in addition to dirt there are two factors of great importance. First, there is the milling action of the press rolls, which has the effect of spreading the threads over a larger superficial area, and setting them, naturally at the expense of the pores. Again, in some felts the warp and weft threads swell, and this also tends to close the pores. Consequently, to maintain a felt in condition, it is necessary not only to remove the dirt, but also to counteract the spreading and settling and often the swelling of the threads.

Frequently, the significance of a principle can be quickly grasped from a practical illustration of one of its effects. Thus the significance of keeping a felt constant is seen in connection with a change-over to a wider deckle width. If it were not for the application of the system, the felt outside the narrower width would be in a condition entirely different to that part of the felt on which the web had been carried, and the felt would have to be taken off. As a matter of fact, the deckle can be opened out without difficulty arising from the felt.

(to be continued)

LAURENTIDE REPORTS A GOOD YEAR

The annual report of the Laurentide Company for the fiscal year ended June 30 indicates the improving trend of the paper trade after the period of deflation which necessitated the writing down of large amounts for depreciated wood piles. It also suggests that the banner year of high prices reported on in 1921 will continue to hold the record for some time.

The name of Sir Vincent Meredith, Bart., president of the Bank of Montreal, appears in the list of directors for the first time, having been named to fill the vacancy caused by the death of R. B. Angus.

The indicated earnings on the stock is 6.90 per cent. compared with 6.23 per cent. in the preceding year, and 15.68 per cent. in 1921.

The president, George Chahoon, jr., in his report states that general conditions in the newsprint industry continue to be satisfactory with the outlook for the coming year that demand will be equal to the supply.

The reserve for employes' pension fund of $508,790.48 has been transferred to the pension committee, and now stands in the accounts payable pending investment.

The directors have deemed it wise to assist the employes to participate in the company's operations, and have purchased shares of the company's stock to the amount of $169,329.37, which amount has been fully subscribed by some 580 employes. This amount is being carried in accounts receivable, the stock being held as collateral.

The report shows operative profit of $2,732,455 as compared with $2,266,254. Miscellaneous profits amounted to $49,435, as compared with $94,386, while income from investments amounted to $386,107, as compared with $332,513, bringing total income to $3,167,998, as compared with $2,693,154. Interest charges amounted to $424,998, as compared with $440,631, leaving a balance of $2,743,000, as compared with $2,252,523. Allowance for depreciation, taxes, etc., was $753,896 ,as compared with $458,461, leaving net profit at $1,989,103, as against $1,794,061. The usual dividends required $1,728,000, leaving a surplus of $261,103, as compared with a surplus of $66,061 the preceding year. With the previous balance of $1,489,528, this leaves a credit of $1,750,632 in profit and loss account.

The balance sheet discloses a number of interesting changes when compared with the figures of the previous year. The companies' wood pile represented by the item of $3,561,373 in the assets is lower by over $1,200,000 than the preceding report, while investments have increased by a substantial amount and now stand at over $5,000,000. Accounts receivable at $1,148,456 are almost double the amount of 1922.

Although current assets and current liabilities show smaller totals than 1922, the liabilities decreased in greater ratio than the assets, the excess assets or net working capital showing a gain of $560,389 at $6,064,517.

In current liabilities it is shown that the company's loan account at the Bank of Montreal has been reduced in the year by $1,065,237 to $2,507,723. Bills payable are also largely reduced while the increase in the payables is explained by the inclusion of the employes' pension fund pending investment, this having been carried previously as a separate item in the current liabilities.

BOOK REVIEW

THE TREATMENT OF PAPER FOR SPECIAL PURPOSES, by Louis Edgar Andes. — Second English Edition, revised and enlarged, 204 + XII pages, one plate, 48 illustrations. Scott, Greenwood & Son, London, E. C. 4. $2.25 postpaid.

It has not been the privilege of the reviewer to read the first edition of this work, but frequent references which have been made indicate that it has been well received and this reception apparently has warranted a second. We have to confess a certain atmosphere of mouldiness in our perusal of some portions of the work. Especially is this the case for example on p. 38 where "Butter Paper" is described. The paper is impregnated with a mixture of salt, saltpetre, and egg albumin. The sheets are hung on lines until partially dry and then each sheet is "finally ironed smooth with a hot flat iron." "This butter paper — is particularly valuable for large butter exporting firms." Too valuable we might say. Again on p. 40 "Wax paper" is described thus: "A number of sheets of paper of firm " texture, are placed in a pile on a large table, and a " little scraped wax is laid on the topmost sheet. On " applying a hot flat iron, the wax will melt and pene-" trate the paper, the surplus making its way down " into the second and third sheets. As soon as the iron " gets cool it must be replaced by a fresh one. Another way is to hold a large lump of wax in one " hand and press is against a hot iron held in the " other, this will ensure a quantity of melted wax " being available all the time, and enable a large num-" ber of sheets of wax paper to be prepared with lit-" tle trouble."

The fact that "wax" is used without qualification while "paraffin wax" is thus described, suggests a recession of about one generation, particularly when on p 41 it is suggested that for paraffin paper, the paraffin wax may be dissolved in benzol or oil of turpentine, being dipped or coated with a brush and hung up to evaporate the solvent, and then proceeds to the finesse of a closed chamber to recover the solvent. Apart from the fire risk, we would probably have to wrap our sandwiches in newspaper at that rate.

We do not believe that much of the fire proof ink p. 48 containing platinum chloride will be called for, or that paper made with asbestos fibre sized with water glass, will have much of the quality of paper after being exposed to the "most intense fire heat" or any other intense heat.

More space is occupied in describing "Paper Horseshoes" on p. 63, than is devoted to "Carbon Papers", p. 119 and in connection with the latter, no mention of carnauba, Montan or Candelilla wax is made.

On page 184 the use of petroleum, ether and carbon bisulphide for dissolving paraffin wax, besides appearing unnecessary and expensive, is far too risky.

Apart however, from these and other expensive or archaic processes, the book contains many valuable suggestions to those who can make discriminating use of them. Others we believe would get into difficulties.

Space forbids detailed criticism of the methods of testing paper, but we believe the method of determining resin-starch size, p. 198 is likely to produce strange results.

On the whole we would say there is little about the book to suggest 1923 as the date of revision.

The subjects covered are Parchment Paper and Vegetable Parchment, 29 pages. Papers for Transfer Pictures, Papers for Preserving and Packing, Fireproof and Antifalsification (safety), Paper Articles, Gummed Paper, Hectograph, Insecticide, and Leather Papers Luminous, Blueprint, Blotting, Metal and Medicated Papers, Marbled, Tracing, Copying, Photographic, Fumigating and Test Papers; Papers for Cleaning, Polishing, and Lithographic purposes, Chapter XVIII refers to many special papers and XIX refers to Waterproof Papers. Chapter XX takes up Paper testing. J. L. C.

THE PAPER MAKERS' DIRECTORY OF ALL NATIONS

The Pulp & Paper Magazine has received from Dean & Son Limited, 29 King Street, Covent Garden, London W. C. 2, a copy of the 1923 Directory which has made this publisher's name prominent in every papermaking country in the world. This is the 32nd edition and more than the average number of changes and corrections have been made in order to bring the information up-to-date, and make it what is probably the most complete Directory of its kind available.

The publishers will appreciate very much being advised of any further changes in production, kind of output type of machines or power used in the mills which may come to knowledge the users of this Directory. It is worth while to co-operate in matters of this kind.

Orders for the Directory may be sent direct to the publishers accompanied by draft or money order for $5.25.

It will be found that the *Paper Makers' Directory of All Nations* is a particularly easy volume to consult, as it is arranged entirely alphabetically, in three sections, the first giving full details of the paper and Board Mills of Great Britain and Ireland, and many lists of Allied Trades, including Stationers and Paper Merchants, Waste Paper, Rag, and Paper Stock Dealers, Cardboard Box Manufacturers, China Clay Merchants, Paper Bag Makers, Paper Agents and Mill Representatives, Export Merchant Shippers of Paper, etc.; the second dealing with the Paper, Pulp, and Board Mills in Foreign Countries and the Colonies, also arranged alphabetically, both as to countries and names, and in dealing with the foreign Mills, the distinctive part of the designation is, wherever possible, that under which it is indexed; the third is a comprehensive list of Mill Productions, yet again arranged alphabetically in three ways: (1) as to class of goods manufactured under more than 400 Trade headings, (2) as to country of origin, and (3) as to name of the firm.

Another important and most useful feature of the book is the "Classified Index to Commercial Pospectuses," on pages xiii to xxxvii, in which the names of Advertisers in the volume have been specially brought together to form a *Buyers' Guide*, of particular interest to those who control the buying side of Mill or Factory.

The whole work forms a most useful publication for those in the Paper Trade, who desire to enlarge their home or foreign connections, and a valuable medium for bringing Paper Makers into communication with Merchants, Wholesale Houses, Newspaper Proprietors, Large Printing Firms, etc., Engineers of all kinds with Paper Makers, Pulp and Board Manufacturers, Printers, Chemical Manufacturers, etc.; Chemical and Color Manufacturers with Paper Makers and Pulp Manufacturers; Rag Merchants, Waste Paper Dealers, Pulp Manufacturers, China Clay and Fibre Merchants, Paper, Puly, and Board Agents, Paper Stock Dealers, Felt and Paper Machine Wire Manufacturers, etc., with Paper Makers, and a host of Allied Trades.

A PAPER CHRISTMAS TREE

The many diversified uses to which tissue paper can be placed and how it can be made a factor in forest conservation are being demonstrated by the Interlake Tissue Mills, Limited, at the National Exhibition in Toronto this year. It has long been a subject for much adverse criticism that thousands of acres of wooded sections in Canada are being destroyed year after year to satisfy the demand for Christmas trees. If the clever idea worked out by the Interlake people in their booth in the Manufacturers' Building takes hold—and there is a mighty good chance that it will—the problem of wreckless waste of trees at the yearly festival appears to be well on the way to solution and it will be done largely through the use of tissue paper. The company have evolved the idea of a Christmas screen which can be made almost entirely of tissue paper and which will take the place of the Christmas tree. The device consists simply of a reproduction of a tree made of green tissue on a stiff background. It can be made by any one and in any size. The idea of course, is to do away with the actual Christmas tree and substitute something sufficiently symbolical to retain the Christmas tree atmosphere. With the Christmas screen, bearing a large reproduction of the old time Christmas tree made of tissue, and a receptacle at the foot of the screen for the gifts, you have something that conveys the Christmas tree idea and at the same time contributes a good deal to the conservation of the forests.

The company have supplied an excellent exemplification of the idea in their exhibit and are offering cash prizes for the best made Christmas screens on the lines suggested by the sample at the booth. Other features in the Interlake exhibit include a large Union Jack and a reproduction of Chief Thunder Cloud the latter done in sixteen different colors of tissue, both of which afford a striking demonstration of the uses of tissue paper for window decorations, poster work and decorative art of all kinds.

A tissue paper Union Jack or flag of any kind can be made and serves to take the place, equally effective, of the fabric flags which run into a lot of money. In the display, also, are artistically arranged samples of the company's napkins, towels and other specialities which form an excellent background to the main—idea that of the Christmas screen for forest conservation and a substitute for the old-time Christmas tree.

ANOTHER PAPER PLANT

The Garden City Paper Mills at St. Catharines, Ontario, proposes to build another paper mill to cost around $400,000. The president of the Garden City Mills is Lorne Gardner and the products of the company include light papers, tissue papers, towels and wax paper. An allied company is the Canadian Vegetable Parchment Company with a bill at Merritton, Ont.

Mr. Hogan, who has been for a number of years the purchasing agent of the Donnacona Paper Company has resigned, and his position will be taken by Mr. Ian Wallace. Mr. Dickinson, superintendent of the paper mill has also resigned his position, and his place will be taken by Mr. Platt.

PULP AND PAPER NEWS

Mr. W. G. Mitchell, manager of the Kenogami mills of Price Bros., was a visitor to Montreal last week.

About 1,000 cords of pulpwood were destroyed by a fire last week at a lumber mill at Newcastle N. B., owned by Messrs. W. A. Hickson & Fate. The mill and contents were also destroyed.

Mr. George M. McKee was in Montreal last week. He stated that owing to unexpected delays in the delivery of machinery his mill at Ogdensburg will not operate until the end of the year.

Mr. Guy Tombs, Montreal, has returned from a trip to England.

The Canadian Export Paper Company Limited, Montreal, have issued a neat folder entitled "Breaks and How to Avoid Them." This reproduces a statement by Mr. L. Schimidt, mechanical engineer of the Robert Hoe Company, referring to the breaking of paper on newsprint presses due to mechanical reasons. The folder also states that "As a safeguard against defective paper the quality newsprint sold by this Company is tested at regular and frequent intervals by the mills which make it. Extraordinary efforts are made to maintain a uniform smooth finish throughout the entire length of the strip so as to give our customers the same easy printing surface which has for so long distinguished the quality newsprint sold by this Company. To overcome the danger of paper breaks in the press-room, the utmost care is employed in testing, the old-fashioned bursting-strength test having been supplemented by the tension test."

It is further announced that commencing the 1st of January, 1924, the Company will have available for the use of publishers an additional 30,000 tons.

In an address to the directors of the National Exhibition in Toronto, C. Howard Smith, head of the Howard Smith Paper Co., Ltd., and president of the Canadian Manufacturers' Association, emphasized the inter-dependence of the rural and manufacturing populations, advocated that protective tariffs should be continued in a healthy condition championed the home market and the home product, and advised the export of more manufactured goods and less raw material.

Canadian manufacturers of wall board were interested last week in the report made to the Minister of Lands and Forests in Toronto of the discovery in New Ontario of what apears to be one of the world's most important gypsum beds. The discovery was recently made by T. J. McDermot, prospector of Sault Ste. Marie, and the location is on a small river tributary of the Moose River, twelve miles from the T. N. & O extension, about half way north between Cochrane and James Bay. The deposit is stated to analyse 99.8 per cent pure gypsum and the bed, as located, is one mile in width facing on the river and extending inland for ten miles.

W. J. Gage & Company, Limited, Toronto, paper merchants, manufacturing stationers, etc., had an attractive display of Holland Linen at the National Exhibition this year. It took the form of a Dutch booth, with the inevitable wind-mill with quaintly attired attendants, and a nicely arranged exhibit of papeteries made from the firm's popular Dutch Linen paper.

Col. Thomas Gibson, Vice President, and J. G. Gibson, Secretary of the Spanish River Pulp and Paper Mills, Limited, have returned to Toronto after a trip to Fort William, where they attended meetings of the directors of the company and of the Fort William Paper Company. A civic dinner and various other functions were offered in the way of entertainment to the gathering of paper men. Among those in the party who visited and inspected the various mills of the company in the district were; George H. Mead, Dayton, Ohio, President of the Spanish River Company, and chairman of the board of directors of the Fort William Paper Company; Col. Thomas Gibson, President of the Fort William Paper Company; Major P. B. Wilson, Sault Ste. Marie, Vice-President of the Spanish River Company; Col. Jones, General Manager of the Spanish River Company; G. R. Gray, director in charge of woods operations for the company; W. N. Hurlburt, and J. G. Sutherland, Dayton, Ohio. The various properties of the two companies were looked over and it was generally agreed that the outlook for fall business is good.

The Alex McArthur Company, Limited, Montreal, have advised the paper trade that they have closed their McGill Street warehouse. Their building and wrapping papers are now all stored under the one roof at the Moreau Street plant.

Arthur Jewett, of the Montreal sales staff of the Provincial Paper Mills, Limited, spent a few days at the head office of the company in Toronto recently.

A. M. Watson, of James Ross & Co., Limited, Dundee, Scotland, manufacturers of jute twine, was a caller on the twine trade in Toronto last week.

The Wilkinson Paper Company, Limited, Wellington Street, Toronto, enjoys the distinction of being the first paper jobbing house to have an exhibit at the National Exhibition in Toronto. The company has an attractively fitted up booth in the Industrial Building where they are featuring water-proof kraft paper and demonstrating it to paper men and others interested. A lot of advertising matter was distributed, among it being 10,000 copies of a neat little booklet describing the marvelous development of the kraft making industry. Samples of the various grades of kraft paper were also freely distributed.

C. H. Featherstonhaugh, of J. C. Wilson & Co., Montreal, was a caller on the Toronto paper trade last week.

Mr. Shibley, of the Chicago Mat Board Company, called on the Toronto paper trade last week.

Among the rag and paper waste stock men who visited Toronto last week were Max Kander, of the Kander Paper Stock Company, Montreal; Thomas Sachs, of Sachs Brothers, Ottawa, and Joseph Albert, of J. R. Walker & Co., Montreal.

The Lennox Paper Mills, Limited, is the name of a new firm that has taken over the Specialty Paper Mills at Camden East, Ont., from the liquidators of the latter firm. The Specialty Paper Mills assigned on March 3rd last and its successors are now engaged in book paper manufacture, using fifty per cent waste paper and producing pulp by the de-inking process. The present capacity is 7 tons of book paper per day and this is expected to be increased shortly to from ten to fifteen tons daily. Oswald A. Porritt is the President and the other directors are Harold E. Walker, W. E. Walker and Percy S. McKergo.

NEW BRUNSWICK NEWS

In the absence of Angus McLean, president of the New Brunswick Lumbermen's Association, who is in Upper Canada, on a business trip, H. E. Beedy, vice-president of the New Brunswick Lumbermen's Association, is leading the fight against the increase in rates by the Workmen's Compensation Board. Mr. Beedy is general manager of the Nashwaak Pulp and Paper Company of St. John, N.B.

The Maine Public Utilities Commission and Water Powers Commission have recently made inspections of the water powers on the St. Croix river. The water in this river has never in history been so low as at present. The river serves one pulp and paper mill, now, that of the St. Croix Paper Company at Woodland. Hollingsworth and Whitney have not yet made a start on the construction of the paper mill at St. Stephen, on the St. Croix.

Premier Veniot of New Brunswick announces that he does not know just yet if the Government will undertake the development of hydro electricity at Grand Falls. It will be recalled that the water power rights at Grand Falls were taken from the International Paper Company, on the ground of inaction by the paper company. Mr. Veniot says the current must not cost over $180 a h.p. or the Government will not undertake the development.

MR WELDON'S VIEWS ON BRITAIN

"I have heard it stated that there are a million and a half unemployed people in Great Britain but if there are I certainly couldn't confirm it from what I saw," said I. H. Weldon in an interview with the Pulp and Paper Magazine of Canada. Mr. Weldon, who is president of the Provincial Paper Mills, Limited, has just arrived back in Toronto after a six weeks' stay in the British Isles and his testimony is that business over there is not so bad as people on this side have been led to believe. His observation about the unemployment problem was followed by the explanation that during the war a million and a half of people, men and women, many of them of the leisure class, got down to the business of helping to win the war at home and that it may have been the demobilization of these people, who were more or less idle before the war, which has given the impression of large numbers of unemployed. Outside of this class, Mr. Weldon says, there is no great evidence of an acute unemployment problem in Great Britain. "Of course I am speaking from the standpoint of an observer rather than as an investigator," said Mr. Weldon, "but judged by the crowds in the shops and the hotels and the apparently heavy traffic on the transportation systems, together with the evidences of contentment as displayed by crowds that I saw flocking to the pleasure resorts and the cricket games and races I cannot see how anyone could say that the Old Land is in an unhealthy condition."

In answer to a question as to the condition of the paper trade in England, Mr. Weldon said that there were evidences of marked development and promises of future expansion throughout Great Britain—more so in fact than there had been in many years. Although it was generally admitted over there that comparatively few of the mills were making money just now, they are looking for readjustments and higher prices in the near future. In the meantime, however, the British paper manufacturer is feeling keenly the competition of French, Belgian, German, and Scandinavian mills which are doing considerable dumping into the English market which makes it impossible for the British paper maker to manufacture at a profit. However, despite these conditions the industry remains on a firm foundation. "The Englishman," said Mr. Weldon, "does not depend so much on modern machinery as we do over here but on the other hand he puts great store by economy and thrift. In other words he doesn't know what it is to plunge ahead and trust to luck and his business may be all the firmer rooted for that."

"Would you advise a general co-operation of Canadian paper manufacturers in displays of our paper products at the coming Empire Exhibition?" Mr. Weldon was asked.

"I most heartily approve of the Exhibition and appreciate its value, but exhibitors failing to make sales must not be disappointed," he replied. "Much should be done in the direction of placing before the British public the great resources of Canada in the way of raw material. The average investor in England has not got it clear that Canada is in a position to supply their market with raw material from our vast forests in the shape of pulp, with the result that he is still looking to Norway and Sweden for his supplies, I think that the part of Canadian papers makers at the show is to educate the British investor in the paper industry and if exhibits can be arranged along these lines I think they will do much to further the interests of the Canadian paper trade as a whole. Let us bend our efforts towards placing Canada's forest wealth before the British financial public in such a way that they will see the wisdom of looking to this country as a field for investment in pulp and wood fibre papers. There is already a big market over there for Canadian kraft and newsprint and I see no reason why this shouldn't be extended to other lines. The way to do it is to tell them and show them what we can do."

Mr. Weldon spent most of his time motoring through England and he admitted that it was tough work settling down to the grind again after so pleasant a sojurn in the tight little island.

TAPPI PROGRAM AT CHEMICAL EXPOSITION

The Technical Association of the Pulp and Paper Industries which will hold its annual fall meeting again this year in conjunction with the Chemical Exposition at the Grand Central Palace, New York on September 20th at 2.30 p.m. has announced six speakers for the occasion. T. L. Crossley, "Pulp and Paper Magazine of Canada" will talk on the "Attitude of Men to Educational Opportunities to Study in Pulp and Paper Mills"; Hubb Bell, United States Testing Company, "The Standardization of Paper by Test"; N. W. Sultzer, Research Corporation," Application of the Cottrell Electrical Precipitator to the Pulp and Paper Industry"; J. H. MacMahon, Mathieson Alkali Works, "Preparation of Bleaching Liquors from Liquid Chlorine"; R. F. Bacon, Texas Gulf Sulphur Company, "The Mining of Sulphur;" James G. Vail, Philadelphia Quartz Company, "Silicate of Soda in the Paper Mill."

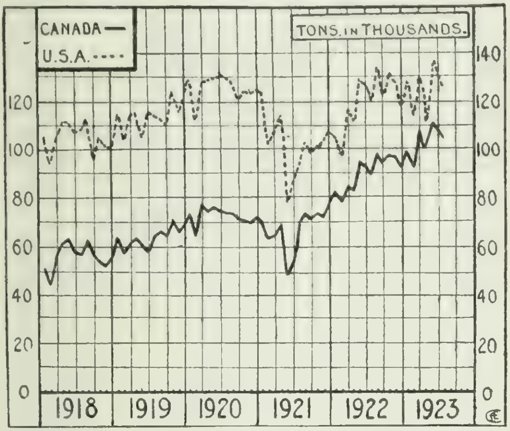
A moving picture studio, with the making of actual pictures, will form one of the educational exhibits at the Chemical Exposition.

NEWSPRINT PRODUCTION IN JULY

Canadian newsprint mills produced 105,716 tons in July, compared with 90,282 tons in July 1922. The production of U. S. mills was 125,768 tons, compared with 120,839 tons in July last year.

In both countries the production last month was lower than in June. There is usually a decline in production in July, as the demand is not quite so great, and the mills take the opportunity to make repairs and get ready for the fall business.

The chart given below, prepared by the Canadian Pulp and Paper Association, shows the course of newsprint production monthly over a period of years. The steady increase in the output of Canadian mills during these years and the lessening distance between the Canadian and the U. S. A. lines of production is well illustrated.



INSERT CUT

Production figures for the first seven months of the year are given below:

	Canada	U.S.A.	Total Tons
7 months 1923	727,613	886,404	1,614,017
7 months 1922	606,788	810,981	1,417,769
7 months 1921	442,832	709,695	1,152,527

Canadian production for this year exceeds last year's production by 120,825 tons, or practically 20 per cent.

The combined production for Canada and the United States is greater than in the seven months of last year by 196,248 tons, or approximately 14 per cent.

CANADIAN SEEKS PAPER MILL SITE IN NEWFOUNDLAND

One of the newest proposals for paper mill development in Newfoundland has been placed before the Legislature by Malcolm Mooney, of Quebec, who is seeking from the Government the transfer to him of a large timber area on the northeast coast of the island for the usual rentals. Mooney agrees to undertake to build a paper and pulp mill on these limits within a period of three years and to spend $300,000 on the project within a year after the signing of the contract between Mooney and the Government. The agreement would call for the erection of a mill with a capacity of 100 tons per day.

PULP AND PAPER EXPORTS INCREASED IN JULY

The report on the exports of pulp and paper just issued by the Canadian Pulp and Paper Association, shows that the total value of these items was $12,066,819 compared with $9,728,252 in July 1922.

Practically all grades of pulp and paper showed increases over the 1922 figures, either in actual tonnage or in value.

Details of the various items are given below:

	July 1922		July 1923	
PAPER:	Cwts	Value	Cwts	Value
Newsprint	1,540,081	$5,453,845	1,859,179	$7,045,653
Book Paper	6,177	42,789	2,571	17,859
Other Paper and Mnfrs	——	541,841	——	632,166
		$6,038,475		$7,695,678
PULP:				
Sulphate	257,743	$ 778,948	249,354	$ 818,787
Sulphite Bleached	266,238	1,012,774	251,804	1,104,668
Sulphite Unbleached	493,589	1,213,700	496,370	1,361,175
Mechanical	537,453	684,355	680,934	1,086,511
	1,555,023	$3,689,777	1,678,462	$4,371,141

The exports in July were distributed as follows:

	Paper	Pulp	Total
U. S. A.	$7,219,461	$3,274,443	$10,493,904
U. Kingdom	199,147	684,710	884,127
All Other	276,800	411,988	688,788
	$7,695,678	$4,371,141	$12,066,819

The exports of pulpwood in July were 151,794 cords valued at $1,557,946 compared with 90,565 cords valued at $946,946 in July 1922.

For the first four months of the current fiscal year there has been a big increase in the value of the pulp and paper exports compared with the corresponding months of 1922; this year's total being $45,093,431 against $35,276,317 last year.

Details for the four months were as follows:

	4 Months 1922		4 Months 1923	
PAPER:	Cwts	Value	Cwts	Value
Newsprint	6,014,369	$21,323,557	7,261,805	$27,366,538
Book Paper	7,988	55,457	16,009	107,770
Other Paper and Mnfrs	——	1,888,717	——	2,536,792
		$23,267,731		$30,011,100
PULP:				
Sulphate	934,656	$ 2,855,463	920,633	$ 3,024,584
Sulphite Bleached	917,418	3,575,576	1,048,790	4,591,220
Sulphite Unblchd	1,315,488	3,347,753	1,597,235	4,359,856
Mechanical	1,742,650	2,229,794	2,126,687	3,404,671
	4,910,212	$12,008,586	5,693,345	$15,380,331

The exports of pulpwood for these four months amounted to 537,305 cords, valued at $5,082,393; compared with 291,640 cords, valued at $2,978,732 in the corresponding months of 1922.

For the four months to July 31st the current year shows an increased export for newsprint of 25 per cent. over last year; for wood-pulp an increase of 16 per cent; and for pulp wood an increase of 84 per cent.

There is no happiness to an evil life. Malice, hate, and envy rob their victims every day.

Technical Section

REVIEW OF RECENT LITERATURE

Testing and Chemistry

A-3, A-4, A-5. Properties and Uses of Paper Pulps. Aribert and Reymond. Mon Papeterie Francaise 53, 566-567, 588-589 (Dec. 1 and 15, 1922); 54, 13-14, 34-36 (Jan. 1 and 15, 1923). A description of the properties of rag (cotton, flax, hemp, ramie, jute and wool), groundwood, sulphite, soda, sulphate, kraft, esparto, straw, bamboo, and reed pulps and of waste paper stock, of the effects of beating and refining, and of the various parts of the paper machine and their respective functions.—A. P.C.

A-0. Problems in Colloid Chemistry Connected with the Paper and Cellulose Industry. R. Sieber. Kolloid-Zeitschrift 31, No. 5 (Nov. 1922); Zellstoff U. Papier 3, 49-51 (Mar. 1923). A discussion of the problems connected with the pulp and paper industry with especial reference to colloid chemistry.—J. L. P.

Wastes

C-2, R-6. Utilization of Waste Bark. J. D. Rue, H. S. Taylor and E. P. Gleason. Paper Trade J. 5, 137-138, Apr. 1923). After briefly reviewing previous articles on the effects of moisture content on the heating value of waste bark details are given of tests carried out with an American bark press and with a Giant Nekoosa Bark Press at the Port Edwards mill of the Nekoosa-Edwards Paper Co., on Oct. 5, 1922.—A. P.-C.

C-2, N-4. Drying of Wood Refuse by means of Stack gases. Svensk Pappers-Tidning 24. No. 4 (1921); Paper Trade J. 75, No. 26, 60, 64 (Dec. 28, 1922). A description of the system developed by Otto Nordstrom for drying barking drum refuse. It consists of a drying tower placed between the boiler breaching and the stack. Inside the outer brick casing are two concentric iron towers, which are perforated to permit the passage of the hot flue gases from the interior to the space inside the brick casing from which they pass to the stack. The refuse to be dried is carried down in the annular space between the two iron towers.—A. P.-C.

Pulp Making & Treatment

E-5. Semi-Cooked Pulp from Strongly Lignified Plants. Hilda Marie, Rudolf Georg and Gerhard Hans Lachmann-Moose. Ger. pat. 364.992. Wochbl. Papierfabr. 54, 1049 (Apr. 14, 1923). The raw material, as wood, etc., is soaked in a chemical solution and then treated with steam under pressure.—J. L. P.

E-5, F-5, K-5. Compressed Air Stamping Machine in the Manufacture of Pulp. A. Grossmann. Wochbl. Papierfabr. 54, 1113-1114 (Apr. 21, 1923 A compressed air device is employed for packing wood, straw, etc., in the digester. The advantages are: addition of more raw material to the digester, large yield of pulp, less time for filling digester, savings in cooking liquor, steam and labor, greater uniformity and efficiency.—J. L. P

G-8. Wet Machine. G. F. McClay and H. V. Haight assignors to Canadian Ingersoll Rand Co., Ltd., Can. pat. 228,450, Jan. 30, 1923. The cylinder mold is of "spiderless construction," i.e., it has no supporting spiders between its ends. Upon moving out of contact with the felt, the cylinder mold is subjected to an internal water spray which dislodges pulp adhering to the wire. Means are provided for relieving the cylinder mold of part or all of the weight of the couch roll.—A. P.-C.

White Water

G-11, K-13. Stock Saving—with and without savealls E. J. Trimbey. Pulp and Paper 21, 135 (Feb. 1, 1923); Paper Trade J. 76, No. 5, 57-58 (Feb. 1, 1923); Paper Ind. 4, 1532-1533. (Feb. 1923); Paper 31, No. 15, 15-16 (Jan. 31, 1923). The author emphasizes the importance of preventing loss of fiber at the source and then using the saveall to catch what gets by all other precautions. Under these conditions they can effect appreciable saving; but if too much is expected of them there is bound to be very considerable undetected losses.—A. P.-C.

G-11, K-13, R-6. White Water Losses and their Reduction. H. F. Obermans, F. R. Hyatt and J. E. Plumstead. Paper Trade J. 76, No. 15, 144-155 (Apr. 1923); Paper Ind. 5, 126-137 (Apr. 1923). The report gives in detail the results of a survey of the industry made in co-operation with the Forest Products Laboratory (Madison, Wis.) to ascertain in general the extent of the white water losses as well as the equipment used to reclaim the stock; results of investigations made in co-operation with the Paper Section of the Bureau of Standards at the mills of Dill & Collins and of the Miami Paper Co. to find the effectiveness of sedimentation tank savealls; and results of tests on stock balance and shrinkage of materials in the manufacture of paper at the Eastern Manufacturing Co., Pejepscot Paper Co., and Watab Paper Co.—A. P.-C.

G-11, K-13. Saveall. J. Denoel. U. S. pat. 1,427,446. Aug. 29, 1922. Same as Fr. pat. 504,661 and Can. pat. 207,600. See Pulp and Paper 18, 729. July 8, 1920; 19, 767, July 21, 1921. (Paper Trade J. 73, No. 1. 52 July 7. 1921.)—A. P.-C.

Preparation of Paper Stock

K-4. Removal of Printers' Ink, Etc., from Paper Chemotechnische Gesellschaft. Ger. pat. 369.468. Papierfabr. 21, 129 (Mar. 4, 1923). Old paper stock is treated with hydrogenated phenols, which are converted into water-soluble substances, either alone or in combination with other solvents.—J. L. P.

K-7. Production of Paper Stock. Hermann Arledter. Ger. pat. 374,193. Papierfabr. 21, 226-227 (Apr. 29, 1923). The disintegration and refining of the pulp is accomplished in a vertical, air tight apparatus consisting of a beating engine mounted on top of a cylindrical tank, which contains the pulp and chemicals. Attached to the bottom of the container is a pipe which extends outside to the beater The pulp is circulated by compressed air. Chemicals, steam and water are added by pipes arranged ring fashion around the tank. J. L. P.

Paper Machines

K-12. An Interesting Newly Patented Paper Machine. J. W. Brassington. Pulp and Paper International No 139-142 (Dec 1922). See Can. pat 222,005 Pulp and Paper 20, 819 (Sept. 21, 1922). Paper Trade J. 75, No 15, 62 (Oct. 12, 1922). A. P. C.

K-12. Innovations in Paper Machine Construction. H. C. Orth. Zellstoff u. Papier 3, 62-68 (Mar. 1923). The construction of the modern German newsprint paper machine is described. J. L. P.

K-12. Recent Development in Paper Making.—T. D. Nuttall. Paper Trade J. 76, No. 2, 45-48 (Jan. 11, 1923). An outline of recent improvements in paper machine design and construction. A. P. C.

K-12. Froth Troubles in Paper Mills. R. B. Best, Paper Trade J. 76, No. 14, 75 (Apr. 5, 1923); Paper 32, No. 1, 9, 22 (Apr. 25, 1923). Brief sketch of the causes of froth formation on the paper machine, with indications for its elimination.—A. P.-C.

K-12. The Head-Box or Flow-Box. Harry Williamson. Paper Ind. 4, 1683. (Mar. 1923). A description of the flow box and of its function. A. P.-C.

K-12. Press Rolls for Removing Liquid from Fibrous Material. Aktiebolaget Karlstads Mekaniska Verkstad. Ger. pat. 369,863. Papierfabr., 21, 147 (Mar. 11, 1923). Each press roll is provided with a sectional covering which is either fastened to the roll or extended, like a belt, to a smaller roll.- J. L. P.

K-12. Breaking of the Web on the Paper Machine. E. Arnould. Papier 25, 501-504. (Nov. 1922). Paper 31, No. 11, 7-8, 14-16 (Jan. 3, 1923). A general discussion of the causes of breaks.—A. P.-C.

K-12. Pulp Cutter for Paper Machines. S. Veillette. Can. pat. 227,444, Dec. 26, 1922. In order to cut the web when the machine is stopped for any reason, a nozzle is supplied, which communicates by means of an articulated connection with a suitable water supply. Means are provided for moving the nozzle across the width of the sheet from the front of the machine. — A. P.-C.

K-12. M-4. Anti-Friction Bearings in the Pulp and Paper Industry. Geo. H. Spencer. Paper Trade J. 76, No. 15, 181-185 (Apr. 112, 1923); Paper Ind. 5, 103-106 (Apr. 1923). — A discussion of the merits of ball bearings on paper machines, especially as regards increased life of wire and of felts. — A. P.-C.

K-12. The Functions of Press Felts. E. A. Rees. Pulp and Paper 21, 115-119 (Feb. 1, 1923). A description of tests which have been started by F. C. Huyck & Sons with a view of ascertaining the proper design of a felt to embody the desired properties of permeability to flow of water, cushion and softness as affecting the concentration of nip pressure. The results obtained are shown graphically by a large number of curves.—A. P.-C.

K-12. Dryer Felt Stretcher. M. H. Jones assignor to Port Arthur Shipbuilding Co. Can. pat. 227,135, Dec. 12, 1922. The tension roll is connected at both ends by means of sprocket chains and wheels with weights for keeping the tension uniform and even at both ends. —A. P.-C.

L-5. Production of Window Envelopes. Boehm-Werke. Ger. pat. 369,471. Papierfabr. 21, 132 (Mar. 4, 1923). A small amount of paraffin oil is added to the rosin and oil mixture for making window envelopes. J. L. P.

DULL PAPER MARKET IN JAPAN

The paper market in Japan was showing some activity in March last when the general business conditions were favorable. Though it was shortlived, plans and measures taken during this period are causing stagnation. The boycott agitations in China against Japanese goods are also contributing bad elements bringing the paper market conditions once again into dull state.

At present unbleached pulp imported is being quoted at 8 8 10 sen to 8 9 10 sen which is 1 sen higher than the domestic product. No fresh contracts are being made at present in this particular line. While the market conditions were somewhat brisk in the last Spring, the associated paper mills advanced their prices, in order to maintain pulp prices made by the domestic mills. They not only advanced prices, but at the same time removed the production restriction of 10 per cent. that had been observed for some time.

Thus when the market conditions began to reverse, this increased production tended further to slacken the market, as the stocks accumulated at the end of June reached to 40,000 tons which is an increase of 7,000 tons from the same period of last year. There are many factors causing a dull market, but the tight money market now prevailing in Japan is the most influential factor, and has caused many smaller mills to close or curtail their operations. Banks would not extend accommodation on their stocks accumulated, and dealers are of course having the very same difficulty. Such being the circumstances, in some districts there are plans now under way to merge smaller mills in order to get rid of the crisis that will soon come, if this is not accomplished. It is generally believed that prices of paper will drop further, as some mills, non-members of the Association, and dealers will start dumping. At least the prospect is not a very bright one for the immediate future of the paper market of Japan.

TO MANUFACTURE RAINCOATS OF WATERPROOF PAPER

Plans have been announced by a Richmond, Va., firm for the manufacture of raincoats from paper to retail at 25 cents each. The garments are to be made from waterproof paper in only four sizes — men's 46, women's 36, and the other two for misses and children. A capelike arrangement will obviate the necessity for sleeves and there will be no distinction in styles between the sexes. All garments will be gray. They will be packed in sealed envelopes, 5 x 7 inches, thereby making it possible to carry the raincoat in the pocket.

According to the manufacturer, the coats have been tried out in a rainy-spell and found to weather the elements most satisfactorily. The initial capacity of the manufacturing plant will be 1,000 garments a day, the output to be increased with an expected rising demand.

BELGO-CANADIAN PAPER

Belgo-Canadian Paper Company, Limited, is setting new records under its reorganized management, and production is now reported to be at the annual rate of 90,000 tons. As another paper machine begins operations about November 1, the output will likely be increased by about 27,000 tons a year.

Strength of character consists of two things, power of will and power of self-restraint.

UNITED STATES NOTES

Labor organizers are again bending every effort to effect an organization of the paper box makers of New York and vicinity. With a strike imminent in 550 manufacturing plants employing in the neighborhood of 8,000 men, women and young girls, union officers are directing meetings preparatory to the conflict. The strike, if called, will be to demand abolition of alleged insanitary and demoralizing working conditions and to get increased wages. The paper box making industry is the largest industry in New York City on a non-union basis. Organization is being attempted by the Paper Box Maker' Union, Local 130 of the Brotherhood of Pulp Sulphite and Paper Mill Workers. This is the fourth attempt of the paper box workers to organize. Unsuccessful strikes occurred in 1916 and 1917. A strike in 1917 was partly successful, but the union was wiped out during the depression of 1920 and 1921.

Members of the Papermakers' Union of Holyoke, Mass., received orders last week to return to work in the paper mills there despite the strike of the stationery firemen. The order was wired by J. T. Carey of the International Brotherhood of Papermakers and was based on the fact that the strike of the firemen was not officially sanctioned by the International Statiinery Firemen's Union.

The Paper Division of the Department of Commerce calls attention to the increasing extent to which the United States is obsorbing Canada's export shipments of paper. In 1921, 91½ per cent. of the total came to the United States. This increased to 92 per cent in 1922 and 97½ per cent. in the first half of 1923, leaving only 2½ per cent for all other markets outside of Canada.

A shutdown for eighteen hours of most of the large industries of Holyoke, which are dependent upon water power, was ended last Thursday as the result of a heavy rain which renewed the water supply impounded by the Connecticut River Dam and allowed the canals to fill.

In a statement he gave out last week regarding the outlook for the American newsprint industry during the rest of the year, Philip T. Dodge, President of the International Paper Company said: "While there is some diversity of opinion, publishers and makers seem agreed that consumption of newsprint will keep up its present high rate, equalling, if not surpassing, the record of 1922. During the first six months of 1923 earnings were very satisfactory, more than covering interest, preferred dividend and sinking fund requirements." The Internatioal Paper Company has large orders to fill and is operating at a maximum, but is still inconvenienced by low water conditions affecting the whole industry.

U. S. A. DEFINES STANDARD NEWSPRINT

Mr. Mellon. Secretary of the U. S. A. Treasury on August 29 made an important decision defining standard newsprint which is of great interest to the Canadian paper trade.

The declaration is as follows:

"As the result of an investigation conducted by the department and the conclusion reached, standard newsprint paper, as covered by Paragraph 1,672 of the free list of the Tariff Act of 1922, is hereby defined as consisting of mechanically ground wood pulp and chemical wood pulp or sulphite containing not in excess of 30 per cent of sulphite and varying in weight not more than 10 per cent from 32 pounds to each 500 sheets of 24 inches by 36 inches.

This definition is applicable to newsprint paper without regard to the color thereof."

The decision enables newsprint of a very high grade to enter the States free of duty and it also settles the question of color. Some shipments of Canadian newsprint have been held up at the border on account of color, it being contended that the variation in these shipments ruled them out of the clause governing the free admission of newsprint.

MR. DODGE ON THE NEWSPRINT OUTLOOK

While there is some diversity of opinion as to the outlook for the U. S. Newsprint industry during the rest of the year, publishers and makers seem agreed that consumption of newsprint will keep up its present high rate, equalling, if not surpassing, the record year of 1922, President P. T. Dodge, of the International Paper Company, is quoted as saying. Mr. Dodge also said that earnings of his company are very high. Interest, preferred dividends and sinking fund requirements are being more than covered, he said. If what Mr. Dodge says is true of International, Canadian producers, with their unquestioned advantages over U. S. manufacturers, must be doing extremely well.

THE 1923 CHEMICAL EXPOSITION PROGRAM

Plans for the 1923 Chemical Exposition which will open at the Grand Central Palace, New York, on September 17th and extend for one week, opening daily at noon and closing at 10.00 p.m. are about completed. Outside of the four hundred odd exhibits which are expected by the time the exhibition opens, two other features have been planned for this year. They are a moving picture program of industrial films to be shown each afternoon and evening in a special auditorium for the purpose, and an intensive course in the practical business side of chemical engineering for students in various universities all over the country.

Thus far, several associations of the chemical industry have arranged to hold meetings during the week of the Exposition. The American Ceramic Society will hold a meeting and the Technical Association of the Pulp and Paper Industries will hold its usual fall meeting in conjunction with the Exposition at the Grand Central Palace. H. S. Taylor of Dayton, Ohio, president of the Association, will preside. The regular fall dinner of the American Institute of Chemical Engineers will be held during Exposition Week at the Park Avenue Hotel, New York.

It matters not how long we live but how well.

Woodlands Section

PULPWOOD INQUIRY TO START IN WEEK

E. H. Finlayson, of the Forestry Commission, who has been named as secretary to the Pulpwood Commission, is still, in the West, engaged with the British Empire Forestry Conference. He is to return to Ottawa in a few days, and then the pulpwood commission will be called to meet. It is expected that one or more hearings will be given by the commission in each of the provinces which are engaged in the pulpwood business.

PULP WOOD STAND OF KYMMENE COMPANY

Vice Consul Frank P. S. Glassey, Helsingfors, Finland, April 14

The timber lands owned by the Kymmene Co. A B, with headquarters at Kuusankoski, Finland, are scattered along the Kymmene River from Kupio to Kavola. It is estimated that the total stand on the 729,907 acres owned by the company is some 7,691,000 cords, 40 per cent of which consists of pine, 32 per cent of spruce, and 28 per cent of miscellaneous woods. During the past few years the company has cleared out much of the birch and aspen, substituting spruce in their place. The forests of this concern are in an easy logging country, the average haul to water for floating being only $2\frac{1}{2}$ miles, with often a shorter distance to a railroad. Slopes are generally gentle and the land is free from large boulders.

One of the most important factors tending toward the cheap production of paper here is the low wage paid to forest laborers. During the past winter the average day's pay earned by a Kymmene workman was 35 Finnish marks (present value of Finnish mark is about $2\frac{3}{4}$ cents), with a slightly higher wage paid workmen who own horses. During 1921 the cost of operation per cord of pulp wood was as follows:

	Finnish marks
Felling	36.25
Hauling over $2\frac{1}{2}$ miles	32.63
Floating or freighting	36.25
Handling at mill	36.25
Overhead and miscellaneous	21.75
Total	163.13

This total cost is equivalent to $4.49 per cord. — U. S. Commerce Bulletin.

GERMAN IMPORTS OF PULP WOOD

In the past year there has been a considerable increase of German imports of wood to be used for paper production. Total shipments amounted to 469,000 cords, which came mainly from Czechoslovakia. Improvement in the Czech currency and depreciation of the German mark during the latter part of the year tended to curtail the trade. (Assistant U. S. Trade Commissioner E. M. Zwickel, Berlin, April 11.)

It will require more than a few hours of fasting and prayer to cast out such demons as selfishness, worldliness, and unbelief. — T. L. Culyer.

CONFERENCE VISITS PACIFIC FORESTS

Vancouver, Sept. 1. — (Canadian Press Despatch) Members of the British Empire Forestry Conference, who for the past few weeks have been making an intensive study of the Canadian forestry situation, and who arrived here Thursday evening, yesterday inspected the large saw-mill plants and logging camps in this district. On behalf of the province, Hon. T. D. Pattullo, Minster of Lands, officially welcomed the delegates to British Columbia.

Today the party will visit stands of green timber and lumber manufacturing plants on the Fraser river, and in the evening a dinner will be tendered the visitors by the Timber Industries Council.

On Monday they will go to Vancouver Island for a week's inspection of timber resources and operations. The tour will end at Victoria with a business session and formal dinner by the Provincial Government.

BLISTER RUST EPIDEMIC

White pine blister rust is epidemic throughout New England and northeastern New York. It is spreading into other parts of New York and into New Jersey, Pennsylvania, Wisconsin and Minnesota. At least 1/10 of the pines are diseased over wide areas, and in certain districts they have all been killed by the parasitic fungus which grows within the bark, girdling the trunk and murdering the tree. This tree disease was brought from Europe some fifteen years ago but did not attack native white pine in North America until 1913. **Seed Tree**, the organ of the New York State Forestry Association, is printing practical advice to be followed by frequenters of the woods, particularly vacationists, and is suggesting that they do their share to help combat insect pests of all sorts. It advises that they "learn more about forestry and the forestry movement and to look for certain insects and diseases which are more easily detected and understood at this time than they will be later in the year." With reference to the white pine rust, it is pointed out that the simplest precaution is to find and uproot every currant and gooseberry bush within 900 feet of the white pines that need protection, care being taken to cut out all the roots. The rust cannot go directly from one pine tree to another. It must first grow on currant or gooseberry leaves. The spores, which transmit the plague from the bushes to the pines, live only a few minutes, and so die if they are carried any great distance.

It is reported that the Manitoba Pulp and Paper Co. is increasing its preference share capital from $2,500,000 to $2,800,000. Mr. B. W. Thompson, vice-president of the J. D. McArthur Company, on returning to Winnipeg from Montreal stated that arrangements for financing the enterprize were complete.

The soul that does not indulge in the luxury of giving is sure to become sordid and small. To save our own lives we should be systematic and proportionate givers.

ANOTHER NEWFOUNDLAND PROPOSITION

Harry J. Crowe, who, with Malcolm Mooney of Quebec, is sponsoring big timber and pulp propositions in Newfoundland, returned to Toronto last week with the announcement that he had concluded an agreement with the Newfoundland Government whereunder he shall be permitted to export rossed and drumbarked timber for a period of 25 years. All export taxes are to be waived for the first year. During the second year he must pay 25 cents per cord export tax, and a tax of 50 cents from the end of the second year onward to the end of the term of 25 years. In consideration of his investment in plant and labor, the Government of Newfoundland agrees to permit Mr. Crowe to import his machinery free of duty.

When seen by the Pulp and Paper Magazine of Canada in Toronto, Mr. Crowe stated that the development scheme would commence with an operation at White Bay, a section of country that has not yet been opened up, and where he owns over 700 square miles of timber land. He is arranging for one or more large rossing or drumbarking plants and for the one or more saw mills equipments which he proposes establishing at or near the bottom of White Bay where a community will be built up and a large breakwater half a mile long will be constructed for shipping facilities. Operations will commence next month and Mr. Crowe has given the Newfoundland Government a guarantee that in addition to the construction work which will provide for a permanent industry, he will cut and manufacture through these two plants a quantity equal to twelve and a half million feet of lumber and pulpwood during the coming winter.

The main object of the development scheme at White Bay is to demonstrate the feasibility of carrying on an operation there of rossing and shipping ready for the grinders, from fifty to one hundred thousand cords annually to a proposed large pulp and paper mill which he hopes to establish on tide water at Ship's Cove, or Rotia Bay in Bay D'Espoir on the South Coast.

Mr. Crowe stated that he had been working on this project for the past ten or twelve years, and had employed some of the best engineers in America, including Col. Hugh L. Cooper, who recently submitted a proposal to Canada and the United States for developing the enormous water power on the St. Lawrence at a cost of $200,000,000, which he and his associates agreed to finance. Colonel Cooper, Mr. Crowe says, has offered to develop his south coast water power at Bay D'Espoir, and finance it to the extent of $10,600,000 provided he can furnish a market for the power by establishing pulp and paper or other industries there.

After considerable investigations and negotiations Mr. Crowe has secured and consolidated into one block, about two million acres of timber limits on the South Coast contiguous to this power, from various companies. He has had these properties cruised by Canadian, Norwegian and American forest experts. Sufficient wood is available, he says, for a plant capable of producing 200 tons of newsprint per day, but in view of the large water powers at their disposal, estimated at not less than 150,000 horse power, the company will erect a mill with a capacity of 300 tons, which is 100 tons more than the Humbermouth proposition which is now in course of construction. This will necessitate a very much larger wood supply than it is possible to furnish on the South Coast and Mr. Crowe has recently secured from John C. Hepburn of St. John's, 1,500 square miles of what is supposed to be one of the heaviest and most economically operated timber areas at Double Mare Bay, Hamilton Inlet, Labrador, from which he hopes to cut annually 50,000 cords for delivery to the proposed tide water mill on the South Coast, which would be located at an open port all the year. With the arrangement he has made for the development in White Bay, Mr Crowe feels that he has fortified his South Coast project with sufficient raw material and hopes now to make rapid progress towards the consummation of his plans for the proposed big paper mills.

He states that the advantages of having White Bay as a feeder to the South Coast pulp and paper plant will be the distribution of labor to different parts of the Island and during the next few years the pulpwood, after being prepared in the rossing plants, will be shipped to the United States. In the event of any unforeseen delay in connection with the big project, arrangements have been made with the Government whereby he may continue the shipment of the product of the rossing plants and saw mills for a number of years, with a view to making the industry in White Bay a permanent one. This settlement at White Bay will be known as Port Randolph, and will have a school, church and other institutions. In addition to the pulp and paper enterprises, which will only use a portion of the power available, it is proposed to establish an aluminum plant and negotiations are now in progress with this end in view.

INSTALLING PULP METERING SYSTEMS

Mr. T. A. Gastonguay of the Trimbey Machine Works, Glen Falls, New York has been at Bathurst, New Brunswick supervising the installation and starting of the Trimbey consistency regulators and metering system for proportioning the groundwood and sulphite pulp going into the stock for the new newsprint machine. The Trimbey Company is having built at St. Catharines, two of these systems for the Ontario Paper Company at Thorold and for the new mill of the Backus Brooks Company at Kenora, Ontario. The Glen Falls plant has supplied recently two metering systems and three regulators to the International Paper Company at Berlin, New Hampshire, and is building two for their mill at Corinth, New York, besides a fifth machine for the Minnesota and Ontario Paper Company, one for a mill in Finland and two for the St. Croix Paper Company at Woodland, Maine.

Mr. Wells is installing at the present time, 24 meters for stock, 16 meters for color, alum and dyes, and 5 consistency regulators at the National Paper Products Company at Stockton, California.

U. S. VIRGIN TIMBER GONE IN 10 YEARS

Dr. Carlton C. Curtis, associate professor of botany at Columbia, who sailed Thursday on the French liner Roussillon for Havre on the first leg of a trip to the Mediterranean and the West Indies, predicted that the virgin timber resources of the United States will be virtually exhausted in about ten years. He deprecated the lact of activity on the part of the Government and the small appropriations made for reforestation.

Professor Curtis cited the fact that several centuries ago this country had more than 832,000,000 acres of timberland, while at present it has less than 140,000,000 acres. He predicted that in 25 years the American colleges would be sending their graduates to the older timber tracts throughout the country to restore the forests, and that the students would find this work of greater interest than indulging in professional activities in the cities.

The Markets

CANADIAN TRADE CONDITIONS

Montreal, September 4 — Business in the Montreal paper trade is still on the quiet side, a condition which will probably continue until the end of the month at least. One of the chief obstacles to a revival is the condition of the printing section. Orders here are scarce, and the competition so strenuous that it is difficult to secure business on a profitable basis. The recent failure of one firm with very large liabilities hit many jobbers, some to a serious extent.

If we take a more general view the pulp and paper industry as a whole must be considered in a healthy state. A glance at the export figures shows that our foreign trade is on the up-grade, whether we take the tonnage or the values. As far as can be seen, the outlook is for a maintenance or improvement, so that there is no reason for pessimism. Naturally local conditions vary, but taking the industry as a unit, there is reason to believe that the era of expansion is not yet ended. Although the newsprint situation is unchanged so far as the present good demand is concerned, the factors are tending towards a higher price for 1924. It is certain that the cost of pulpwood will be higher owing to the heavier expenditure for woods operations; the large outlay for protecting the limits from fire. The chances are for a rise in coal prices. The Canadian companies have hitherto adopted the policy of setting a price for newsprint which will encourage consumption, and the companies may be inclined to absorb the extra cost of manufacturing rather than advance the price and chance the possibility of thus reducing the demand.

In most other lines the demand is quiet. The waste paper department is firm, while the call for roofing paper is excellent.

The pulp market keeps much the same. Groundwood is very firm, with supplies on the scarce side. Kraft is quiet, while bleached sulphite is in good request at unchanged values.

The cost of woods operations for the 1923-24 season will mean a largely increased bill for pulp and paper companies. Camp men are now being employed — a large number have already been engaged—at prices which represent a considerable advance on last year's terms. Wages run from $50 to $55 per month, on improvements, with jobbers offering as high as $90 for expert choppers. Men are being freely advertised for by the employment agencies in Montreal, who require help for both Ontario and Quebec companies. As a matter of fact, the supply of men is not overabundant, and this has been one factor in raising the terms. Directly one jobber or company offers better wages, the others are bound to follow this example if they want to get and retain the men who will jump from one camp to another, if higher wages are to be obtained. This rise in the camp expenses will of course be reflected in the price paid for pulpwood supplies, and will in turn influence the price set by pulpwood dealers for wood from colonists' and settlers' land.

While a fair amount of business is being done in pulp and paper circles most firms both manufacturing and distributing report rather light sales, with a tendency towards small-sized orders and a disinclination to buy for other than immediate requirements. Very few of the paper concerns say that business is what it should be. The fact remains, however, that in some lines a fair turn over of paper is taking place. There has been a slight picking up, for instance, in the sales and consumption of wrapping papers and the demand for kraft, although not what it was earlier in the season, is increasing to some extent. On the other hand there has been a falling off of late in the book paper trade. It is stated that very few of the mills have orders more than a month ahead and some of them are said to be running on current orders only. It is likely that a couple of the big Ontario book paper mills will close for repairs and renovations within the next few days and while this is not necessarily the result of poorer business the fact remains that the renovation operations would be postponed if there was a big enough run of business to warrant it. Manufacturers of bonds and ledgers report business as rather lifeless with no large sized orders being booked just now although a fair tonnage is being produced in response to the many small orders that are being placed. The envelope trade is keeping up fairly well and manufacturers are fairly busy. Box board manufacturers report a fair consumption of board by the paper box industry which is running along nicely with a slightly increased business. The testimony of the waste paper dealers who gather the waste from the box makers is that they are getting big supplies of waste in just now which would indicate considerable activity among the box makers. Generally speaking, however, the Ontario paper trade may be said to be spotty. There unquestionably has been an unsettlement of business and more or less impairment of confidence generally as a result of the failure of the Home Bank and this has had a deterrent effect on most lines of trade in Ontario although the reaction is not looked upon as a serious or permanent one. In the meantime, however, it assuredly has had the effect of tightening up money at a time when collections are none too good in any line of industry or business.

PULP.— There is comparatively little activity in the pulp market. Groundwood pulp is a little easier and is down about a dollar a ton, although the prevailing quotation is still around $38.00 a ton for book grade and about $35.00 for news grade and mills in want of immediate supplies are said to pay higher prices. Bleached sulphite is quoted at $90.00 and up and unbleached at from $60.00 to $65.00. It would appear as if the groundwood mills have fairly large stocks on hand and as neither the Canadian nor American paper mills are as busy as they were no large stocks of pulp are being moved. The easier market for groundwood applies especially to the lower grades. There is a fair demand for sulphite pulp.

RAG AND PAPER STOCKS — There have been no changes in the prices of rag and paper stocks. Consuming mills have been offering reduced prices for paper and this has led to some unsettlement in the market. Book mills are not placing the orders for waste that they were some time ago and orders to the rag and paper stock collectors generally by the paper mills, for the most part, continue light.

NEW YORK MARKET

New York, Sept. 1.— (Special Correspondence) In jobbing circles, a little slowing down of business in paper was reported this week, but this was attributed to nothing else than the quieting influence of the approaching holiday and the fact that the week prior to Labor Day is invariably a slow business period since everyone is expectant for a definite turn in the markets following that holiday as it is regarded as the unofficial closing of the summer season. Reports from mill centres continue to tell of increasing activity at paper manufacturing plants. Papermakers with few exceptions are said to be gradually enlarging their production since the demand from consuming quarters fully warrants such policy, and it is reliably stated that mills are today working on a larger scale than at anytime since last spring or prior to the summer lull.

General business conditions appear to foreshadow a splendid market for paper during the remaining months of the year. One highly encouraging feature is that a greater number of merchants and buyers from all parts of the country have been in New York during the late buying season than ever before and that these buyers have purchased a far larger quantity of merchandise than ever in the past. This indicates that retailers anticipate a big business during the coming fall and winter season, and everyone knows that when retail business is active there is a brisk movement of paper of various kinds because consumption of paper of most descriptions is dependent on the retailing of merchandise. Moreover, business in various other lines is showing steady improvement; there is a gradual return to stability of prices and the consuming public is increasing its buying. This in turn will lead to a larger use of paper and provide more business for paper manufacturers and dealers.

Newsprint output in the United States, as well as in Canada, keeps up at the peak, allowing of course for the seasonal variations, and the output thus far this year is well ahead of that for the same time of last year. United States production in July amounted to 125,768 net tons, against 120,839 tons in the same month a year ago, according to association figures, while Canadian production was 105,716 net tons, compared with 90,282 tons in July, 1922, thus showing that July output for both countries was more than 20,000 tons greater than in the similar month of last year. July production in the States showed a slight falling off from June, but this is usual as mills make repairs after the half year has passed and therefore curtail their output somewhat for a time.

Manufacturers report that resumption of orders for fall and winter delivery is about a month ahead of the usual time this year, which is true in other kinds of paper as well as in newsprint. Newsprint consumption shows no diminution; in fact, there has been a noticeable increase in the past several weeks and 1923 will likely be a record year, judging from present prospects. At any rate mills in both this country and in Canada should have plenty to keep them busily engaged for the balance of this year since most of them already are contracted for nearly their full output and since a good deal additional buying has yet to be done by publishers. Manufacturers assert that higher costs of raw materials and labor is increasing production costs but the trade looks for no change in prices as producers have announced no advances will be made for the rest of the year.

Secretary of the Treasury Mellon on Wednesday signed a classifying order under the Tariff Act providing that hereafter imports of standard newsprint, as defined under the order, will have free entry on the basis of 32 pounds to each 500 sheets of 24 by 36 inches in size. Heretofore standard newsprint has been classified under chemical content of the paper itself rather than by weight. Custom officials explained that the change would increase the quantity of newsprint that might have free entry.

Demand for book paper holds up well and this market is slowly but surely expanding. Mills are running at a fair rate of capacity and are reported finding it necessary to increase their production to take care of the additional business coming in to them. Prices are steady and there is a stiffening tendency noted. Fine papers are moving in fairly large amounts and at firm prices. Printers are ordering more frequently and are increasing the volume of their buying. Coarse papers are wanted in moderate quantities though there is still much room for improvement in this branch of the market.

Box boards are quotably steady and are moving in gradually increasing tonnage. Paper box manufacturers are buying in larger amounts because their requirements are growing, which is usually the case as the fall draws near. Plain chip board is quoted at $60 a ton f.o.b. New York, and filled news board at $62.50 to $65, with some mills so well supplied with orders that they are asking higher prices.

GROUND WOOD.— The ground wood market has continued to strengthen this week. Demand has shown no let down, instead there has been a greater desire on the part of consumers to secure pulp than previously was noted, while offered supplies have further decreased. Water conditions are exceptionally unfavorable in many grinding districts, it is declared, and few grinders are able to turn out a normal tonnage of pulp under prevailing circumstances, with the result there is scarcely enough ground wood to go around and buyers are anxiously seeking available stocks with which to fill their wants.

It is reported that Canadian grinders are quoting as high as $50 a ton f.o.b. pulp mills for spruce ground wood for prompt shipment, and these manufacturers are making the market at present since domestic producers have practically no ground wood to sell. Furthermore, a good many grinders on the Canadian side are no longer making offers except to regular customers as they have apparently booked all the orders they can accomodate for a time. As an instance of the strong price position, dealers in New York are bidding $45 a ton at pulp mills for ground wood for shipment anytime during the next month, which infers they can readily secure more than this price from consumers. A bullish feature is that grinders in general are sold ahead all through September so that the market should remain in its present strong position for at least another full month, and probably for a longer period unless water conditions improve very materially in the interim.

CHEMICAL PULP.— Not much trade activity has been recorded in chemical wood pulp this week. Papermakers seem to have temporarily let down in their buying excepting of course to cover urgent requirements, and the market is in a more or less waiting condition — waiting for consumers to exhibit more interest. Prices are quotably maintained with the exception of an occasional offering of some certain lot of pulp at slightly under recognized market levels. Dealers and importers are not pressing matters and are generally biding their time in the belief that September will witness a much broader call from paper mills for pulp, yet on the other hand some cases are cited where sellers, anxious to convert stocks into cash, have disposed of pulp at price concessions.

Foreign unbleached sulphite of No. 1 grade is quoted at a broad range of 3.15 to 3.40 cents per pound ex dock New York, and imported kraft is quoted at 3.10 to 3.35 cents, with Swedish kraft mostly held at close to the high figure. Bleached sulphite is quoted at 4.50 to 5 cents f.o.b. pulp mills for No. 1 domestic, and around 4.50 cents on the dock New York No. 1 foreign sulphite.

RAGS. — Only slight changes have occurred in papermaking rag prices. Low grades continue rather easy but the better qualities of rags display an upward tendency and are sought by consumers in larger amounts than in some time. Roofing rags have been readily salable this week but only within certain price limits, felt mills offering about 1.40 cents a pound f.o.b. New York for No. 1 packing and 1.30 cents for No. 2 stock. Old white rags are firm and in good demand. Extra No. 1 repacked whites are fetching 8 cents a pound and higher in sales to fine paper mills, and even ordinary packing of New York City origin of these rags is worth 7 cents f.o.b. this city. Thirds and blues are quoted at around 3 cents a pound for repacked, and 2.25 cents for miscellaneous packing at dealers' shipping points. New cuttings incline to stiffen in price and some descriptions are hard to locate in sizeable lots. Unbleached muslins especially are scarce and are bringing 11.25 cents a pound in sales to paper mills. Blue overall cuttings, canton flannels and shoe rags also are in comparatively small supply. No. 1 white shirt cuttings are quoted by New York dealers at about 12.50 cents per pound f.o.b. this city.

PAPER STOCK. - The trend of waste paper prices continues downward and further recessions have been recorded. Mills are buying in restricted fashion, evidently having their needs taken care of for a time, and dealers plainly are anxious for orders. Flat folded newspapers have sold to board mills at one cent a pound f.o.b. New York, and No. 1 mixed paper at 85 cents a hundred pounds. An excedingly dull grade is common mixed paper which is offered at 50 cents a hundred pounds New York and which very few consumers are buying. Shavings are quoted at about last prices though demand for them is narrow. Dealers ask 4.25 to 4.50 cents a pound for No. 1 hard white at shipping points, and around 3.35 cents for No. 1 soft white shavings. Books and magazines are off to around 1.85 cents a pound f.o.b. New York for heavy No. 1 books, while kraft and manila papers are relatively steady at about 2.25 cents a pound for No. 1 old kraft and 1.25 cents for No. 1 print manilas.

OLD ROPE AND BAGGING.— Interest among consumers in old manila rope is reviving and there is a better tone to the market though prices have not changed. Domestic No. 1 rope is bringing 5.50 cents or slightly less at dealers' shipping points, and foreign manila rope about 5.25 cents exdock New York. Mixed strings are high in price and freely sought. Sales in exceptional cases at 1.50 cents a pound New York have been reported. Demand for bagging for shipment to roofing paper mills has been fair and No. 2 scrap bagging for such purposes worth almost as much as No. 1 bagging which is used by tissue and manila paper mills. Roofing bagging has sold at 1.10 cents a pound f.o.b.

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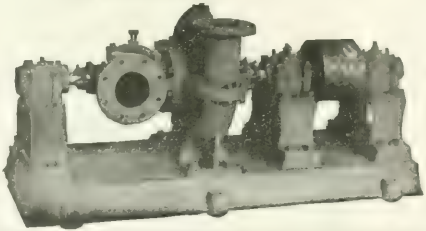

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:-: EDITORIAL :-:

WHAT'S BECOME OF THE FIFTH GRADE BOY?

It may seem a bit unusual for a magazine closely associated with one Institution to give maximum publicity, free of charge, to the advertisement of another organization in the same line, but the following paragraphs from the advertisement of the International Correspondence Schools that appeared in the "Saturday Evening Post" for September 8th, is very much to the point just at this time when schools are opening and many boys, and girls too, who find themselves for various reasons unable to carry on their educational work are likely to feel discouraged about their future, and possibly consider themselves blocked from further progress because they are unable to continue their studies in the class room with their mates of the past year.

The Institute of Industrial and Domestic Arts conducts the largest school of Pulp and Paper Making now in existence, and this is one of the few fields not adequately covered by the activities of the International Correspondence Schools.

Where courses are desired in a subject not covered by the Institute of Industrial and Domestic Arts, we should not hesitate to recommend the I. C. S. course in the subject desired. The chief textbook editor of the I. C. S. for many years is now connected with the staff of the Institute of Industrial and Domestic Arts, and the founder of the I. C. S., the man who established its successful policies of education, is advisor to the joint executive committee, in cooperation with whom the Institute carries on its educational work.

The following figures on school and college attendance are based on statistics given in Bulletin No. 34 (1920), issued by the Bureau of Education, United States Department of the Interior. The paragraphs referred to ready as follows, and the lesson we wish to point is that no one need discontinue his or her education simply because it is necessary to quit school, nor even to think of stop studying on the completion of perhaps a post graduate University Course.

Stand at the gate of any public school in any city in America any September morning and count 100 fifth grade pupils as they answer the call of the bell. On the average they are 11 years of age. Seven more years of grade and high school training lie ahead, and a thousand colleges and universities wait beyond with special training for useful, fruitful lives. They are boys and girls of fortunate futures in a land of boundless advantage and opportunity.

But come back a year later and stand at the sixth grade door and, search the ranks as you will, you will find but 83 of the 100 who answered the bell the year before. Already 17 have dropped out along the way. They have had to put their hands to work to help out the family income or have grown indifferent to the value of an education.

The seventh grade will see but 71 of them, the eighth grade but 63, and after that the line thins even faster.

Stand at the high school doorway four years from that first morning and you will count but 34 familiar faces, and four years later 14 diplomas will be enough for all that still remain.

Now, this little group will divide evenly. Seven will go to college. And if you follow the fortunes of this dwindling company for four years more you may see 2 of them—yes, just 2—step out on a Commencement Day in June trained for satisfying careers in business or professional life.

Where are the other 98 of the noble little company of fifth graders? You will find them in the shops and stores and mills and mines, on railroads, in offices, on the farms and on the sea—two-thirds of them laboring under the handicap of an eighth grade schooling or less—27 more with the somewhat better thinking and earning power that the years at high school gave them, and only 5 with the advantage in position and income yielded by some college training.

But here is a compensating and gratifying fact! Among these 98 you will find a surprising number who stand out from the others—men with trained minds, men with distinctive skill, men in highly responsible positions, men in successful businesses of their own.

They are the men who knew that waiting at the door, ready to help every man whom necessity takes prematurely from the class-room, is an established medium of training especially designed to meet his circumstances and his needs — the International Correspondence Schools.

For 31 years these schools have served faithfully the man who must spend his day in business or in industry, yet in whose breast burns an ambition to know more about the work of his choice and to attain the advancement that knowing more is bound to bring.

The International Correspondence Schools recognize fully the unique and distinctive character of the field they serve and the magnitude of their opportunity for service. And to meet both adequately they maintain an educational service without precedent or equal in scope or practical usefulness.

They recognize that they must be prepared to help the individual to achieve a practical accomplishment, whatever his individual circumstances may be. And so they come to him. They make his home the schoolroom. They make the time for study any spare moment he may have at any hour of the day or night.

They provide textbooks especially prepared for individual study in the home—textbooks so clearly and simply written and fully illustrated that only the ability to read English is required to learn from them successfully. And they supplement these printed texts with personal instruction by correspondence, so intimate and helpful that it conveys the impression of the constant inspiring presence of the instructor.

This service is available in 304 courses, including every branch of engineering and practically all departments of business. It is designed to train men for their work at their work, wherever they may be.

The International Correspondence Schools aim never to dissuade the individual from the advantages of resident school or college training if circumstances will permit such attendance. They encourage every young man and woman to remain in the classroom until absolute necessity forces them into wage earning.

The schools and colleges of America are splendidly preparing those in their care for useful lives. And the International Correspondence Schools, in their distinctive and infinitely larger field, constantly seek to improve and extend the distinctive, practical service which has made them by far the largest educational institution in the world.

PULPWOOD EXPORTS DECLINING

The exports of pulpwood this year have been considerably above those for any year hitherto, and the figure for July reached the astonishing high point of 197,544 cords. This, it will be seen, would be at the rate of 2,370,528 cords per annum. The first three months of the present fiscal year showed a total export of about twice this quantity or 385,511 cords, which if maintained would represent an export of 1,540,044 cords. From the figures for July, which were 151,794 cords, it will be seen that the rate of export had fallen off somewhat and the annual volume if maintained at the July figure would be 1,811,528 cords. There may be a reason for the very high figure in June. Perhaps it was that this month gets the bulk of pulpwood export on account of the drives being finished in May in most districts. It may be however, and perhaps is to some extent at least, due to the fact that there was imminent at that time an embargo on pulpwood export from freehold lands. The slightly smaller export of wood in July would indicate one of two things: in the first place, that the bulk of the spring drive had been taken care of insofar as the additional immediate requirements of mills in the States were filled, and in the second place, that the appointment of the Royal Commission for investigating the pulpwood situation gave the importers, on the other side, of our pulpwood a feeling of greater security in anticipation of no immediate action on the part of Canada with regard to putting the embargo legislation into immediate effect.

The first meeting of the Royal Commission appointed to inquire into the pulpwood resources of Canada met in Ottawa on Monday; it is understood that this was largely an organization meeting and that the Commission will devote some time immediately to the investigation of available statistics relating to this subject and to the requirement of the pulp and paper industry in Canada. Statistics are curious things and it will be interesting to await the Commission's interpretation of the figures they find available. We trust they will supplement their researches in the archives of the Dominion and Provincial Governments with some actual visits to the forests in order to get a first hand view of the wide devastation that has occurred in our forests in the last few years, and get a clear idea of the relatively small amount of timber that remains for the continually increasing domestic requirements of our own wood using industry.

THE UPS AND DOWNS OF PAPER MILLS

Elsewhere in this issue, more detailed reference is made to the situations in which two of Canada's leading producers of sulphite pulp at present find themselves. The Whalen Pulp and Paper Mills, operating three plants in British Columbia have been weathering with some degree of success a number of unfortunate circumstances of the past few years, and there seemed to be a fair chance of their pulling through when the recent awful catastrophe in Japan caused such a collapse of the principal market for the Company's product that a drastic move became necessary. There is great intrinsic strength in the Company's holdings; they have three very good mill properties, and their product is of high grade. We have no doubt that the Company will recover, though it may be a slow and possibly painful process.

The other situation relates to the Riordon Company. This concern has continued in operation under difficulties for some three years and the temporary management deserves a great deal of credit for the manner in which the affairs of the Company have been carried on in that time. There was announced this week a reorganization plan which bids fair to put the Company on a permanent and substantial basis. It is regrettable that those who have invested not only their cash but their very life work in building the original company are not as favorably placed in the reorganization as those who have come along later with the financial support that has kept the plants in operation, and provided for their extension. It is probable that a good many holders of the old common stock would rather now there had been only preferred stock with the provision for a graduated distribution of excess earnings.

The directors announced for the reorganized company are a remarkably strong aggregation. The cooperation that has been shown throughout the time of trial and trouble is eloquent evidence of the solidarity and soundness of the Canadian pulp and paper industry.

Riordon Reorganization Plan

The long expected reorganization plan of the Riordon Company Limited has been issued. It is a very long document dealing in detail with the position, properties, and finances of the company.

The plan proper is preceded by an introductory statement, description of properties, estimates of earning power, etc., which are included for the information of those interested in the reorganization and are not part of the plan. It is stated that all references to the assets and liabilities of the Riordon Company include those of the Riordon Sales Corporation, Limited and the Riordon Pulp Corporation, whose assets and business will be consolidated with those of the Riordon Company in the reorganization.

The following review consists of extracts from the published plan, and from comments by the Financial Page of the Gazette.

The plan shows that instead of a present capitalization of $47,000,000 made up of $10,000,000 8 per cent. first preferred, $10,000,000 7 per cent. second preferred, and $27,000,000 in common stock, the reorganized Riordon Company will have $10,000,000 7 per cent. cumulative prior preference shares, $5,500,000 7 per cent. preferred shares (cumulative from January 1st, 1925), and 600,000 shares of common stock (no par value). Taking the new common shares at the book value indicated by the consolidated balance sheet, accompanying the plan, the stock capitalization will be reduced by over $25,000,000. The funded and other indebtedness will be reduced by $15,000,000.

In regard to the bonded debt of the company, the first mortgage 6 per cent. debentures and the first and refunding mortgage 8 per cent. bonds, having a total par value of $7,758,800, will remain outstanding, the overdue coupons of the first and refunding mortgage 8 per cent. bonds being paid in cash, with interest at 6 per cent. The holders of the general mortgage 6 per cent. bonds, totalling $3,987,500, will receive in exchange for their bonds and accrued interest to the 1st of July, 1923, approximately $1,000,000 par value of 7 per cent. prior preference stock, $4,466,000 7 per cent. preferred stock, and about 40,000 shares of no par value common stock, i.e., each $1,000 bond with accrued interest being exchanged for $250 par value of 7 per cent. prior preference stock and $1,120 par value of 7 per cent. preferred stock and 10 shares of common stock.

The unsecured creditors are to receive in settlement of their claims (aggregating about $500,000), 25 per cent. in new 7 per cent. preferred stock and about 45,000 shares of the new common stock, with the option to take, instead of the 25 per cent. in preferred stock, the same subscription rights as are offered to the first preferred shareholders. The present shareholders are given the right to subscribe for new 7 per cent. prior preference and common stock on the following basis:

Each of the first preferred shareholders is entitled to subscribe in cash up to 60 per cent. of the par value of the shares held by him. For each $100 of cash subscribed, he will receive $120 par value of the new 7 per cent. prior preference stock and 5 shares of new common stock.

Each of the second preferred shareholders is entitled to subscribe up to 25 per cent. of the par value of shares held by him and for each $100 of cash subscribed he will receive $120 par value of new 7 per cent. prior preference stock and 3 shares of new common stock.

Each of the common shareholders is entitled to subscribe in cash up to 5 per cent. of the par value of shares held by him and for each $100 of cash subscribed, he will receive $120 par value of new 7 per cent. prior preference stock and 1½ shares of new common stock.

New Capitalization

The following is a table of capitalization and indebtedness as at present existing, compared with capital and debt after reorganization has been completed:

	As Now Outstanding	After Reorganization
Capital stock	$47,000,000	$21,732,950
Bds. & Mortg.	19,064,188	16,567,127
Current liab.	14,338,722	2,000,000

The grand total of stock, bonds and other debt now outstanding is $80,402,911, and the above figures indicate that this will be reduced by about $40,000,000.

Dividends on old preferred stocks presently outstanding called for annual disbursements of $1,500,000. On the prior preference and preferred stock to be outstanding after reorganization, the annual dividend requirements will be approximately $1,000,000. Total reduction in dividend and interest requirements (including interest on current bank loans) will be approximately $1,165,000 per annum.

Consolidated balance sheet published with the plan shows that, after giving effect to the proposed reorganization and new financing, the company's current assets will be approximately $6,545,122, as against current liabilities of about $2,000,000, leaving net working capital of approximately $4,500,000.

The plan provides for the raising of approximately $10,000,000 of new money, as follows:

$2,713,000 by the sale of $2,070,000 First and Refunding Mortgage Bonds and $1,000,000 of 7 per cent. Debentures.

$7,500,000 by the sale to the Preferred and Common Shareholders and to unsecured creditors of the company who exercise their participation rights of Prior Preference and Common Shares, on the basis stated above.

If the present first preferred shareholders should exercise all their participation rights they would receive 300,000 shares of the new common stock, or half the common stock capitalization of the new company.

Of this $10,000,000 of new capital, $8,000,000 has already been underwritten or contracted for by bankers, well known individuals associated with the Canadian pulp and paper and lumber industry, and by other underwriters.

As the general mortgage bond-holders and unsecured creditors will, under the plan, exchange their bonds and claims which now rank ahead of the pres ent shareholders to the extent of approximately $9,000,000 for preferred and common stock of the company, it is obvious that the shareholders of the present company can expect to share in the future of the company only if they are willing to contribute new capital towards the company's rehabilitation, and it is to be noted that the 7 per cent. Prior Preference Stock which shareholders who contribute will receive ranks ahead of the 7 per cent. Preferred Stock, which is the chief medium of settlement with the General Mortgage Bondholders and creditors.

The plan will become operative provided shareholders and unsecured creditors take up their participation rights to the cash amount of $2,083,333. In the event of this amount not being contributed by shareholders and unsecured creditors, the reorganization managers have discretion to make up the deficiency by placing the stock elsewhere or by other means.

But it is felt that the old shareholders, being given the right to subscribe to securities ranking ahead of securities taken by $9,000,000 of bondholders and creditors, and, in addition, being given control of the common stock of the enterprise in the event of their taking full advantage of their subscription rights, will subscribe liberally to the new securities, feeling that the securities which they are purchasing are sound value and carry with them such a large amount of common stock as to enable them to recoup their loss in the old securities through enhancement in value of the company's properties and consequent enhancement in value of the new common shares.

The following tables show in condensed form the estimated annual capacity of the Riordon Company's mills (including also the mills of the Ticonderoga Pulp and Paper Company, over 60 per cent. of whose stock is owned by the Riordon Company), and the timber holdings and water powers of the Riordon and Gatineau Companies, based in each instance on the best information now obtainable. The timber estimates are subject to a relatively small percentage of deduction for the current season's cut.

Pulp and Paper Production

Plant	Location	Product	Present Capacity tons per annum
Kipawa Mill	Temiskaming, Que.	Bleached Sulphite Pulp	50,000
Hawkesbury Mill	Hawkesbury, Ont.	Bleached Sulphite Pulp	35,000
Merritton Mill	Merritton, Ont.	Bleached Sulphite Pulp	9,000
Ticonderoga Mill	Ticonderoga N.Y.	Soda Pulp	11,000
Ticonderoga Mill	Ticonderoga N.Y.	Book Paper	17,000
Total Pulp and Paper Capacity			122,000

Lumber Production

Plant	Location	Product	Annual Capacity, feet b.m.
Rockland No. 1	Rockland, Ont.	Pine and Spruce	35,000,000
Rockland No. 2	Rockland, Ont.	Pine and Spruce	15,000,000
Hull	Hull, Que.	Pine and Spruce	25,000,000
Calumet	Calumet, Que.	Pine and Spruce	15,000,000
Total Lumber Capacity			90,000,000

The above figures include only sawn lumber, to which should be added for the Hull and Rockland mills the following items.

Pickets, f. b m.	Laths, pieces	Ties, pieces	Posts, pieces	Shingles, pieces
2,600,000	28,000,000	150,000	7,500	17,000,000

Timber Holdings

Water Shed	Area, sq. mls.	Pine, f.b.m.	Pulpwood, cords	Hard Woods, f.b.m.	Cedar, Ties	Tributary to Mills at
Rouge River	1,239	3,688,000	2,263,179	363,851,000	918,663	Hawkesbury and Calumet
Upper Ottawa	2,526	105,523,936	6,880,289	240,906,676	870,000	Kipawa
Total Riordon Co.	3,765	109,211,936	9,143,468	604,757,676	1,788,663	
Gatineau River (including Dominion Bank)	5,873	749,644,000	12,518,500	432,740,000	1,625,500	Rockland, & Hull
Grand Total	9,638	858,855,936	21,661,968	1,037,497,676	3,414,163	

Water Powers

Ownership	Watershed	Drainage Area, sq. miles	Head ft.	Nature of Title	Ultimate Capacity Continuous H.P.	Present Developed Cap., H.P.
Riordon Co.	Rouge River	2,009	200	Riparian Rights	14,000	....
Riordon Co.	Kipawa River	2,174	200	Quebec Lease	26,000	7,200
Riordon Co.	Quinze River	8,900	65	Quebec Crown Grant	32,000	
Riordon Co.	Welland Canal	.	65	Dom. Govt. Lease	4,500	500
Gatineau Co.	Gatineau	9,700	82	Riparian Rights	45,000	...
Gatineau Co.	Gatineau	9,700	61	Riparian Rights	33,500	..
Gatineau Co.	North Nation	731	234	Riparian Rights	8,500	...
Total Continuous Horse Power at Minimum Flow					163,500	7,700

Estimated Earning Power Based on Current Operating Results

The best available basis for estimating the earning power of the Kipawa and Hawkesbury mills under normal conditions, is furnished by the actual results of recent operations. For this purpose, however, two adjustments must be made. Most of the wood consumed up to June 1 was carried over from the stock on hand in 1921, and was produced at the high costs prevailing in 1919 and 1920. It was also necessary to supplement the supply at Hawkesbury by the purchase of wood for rail delivery during the spring months, before the present season's cut could reach the mill. To furnish a fair measure of present earning power, the actual cost of the wood used must be adjusted to present replacement cost, based on the past season's operations of the Company on its own limits.

The coal consumption at both mills during the last winter was also abnormal, due in part to the poor quality of coal obtainable during the prolonged coal strike of last year, and in part to unusual low water conditions, which necessitated running the auxiliary steam turbine plant at Hawkesbury on 129 days during the past season, against an average of about 10 days for five years previous. In preparing the figures given below an adjustment has been made to reduce this excessive coal cost to what is believed to be a fair average under normal conditions.

The manufacturing costs and operating profits of the Riordon Company for the eight months ending June 30, 1923, as shown by the Company's books, have been audited by Messrs. P. S. Ross & Sons, and the actual results adjusted for the two factors above mentioned. With these adjustments the manufacturing profits for this period, before deducting income tax, interest or depreciation, were at the rate of approximately $2,150,000 per annum. These figures do not include any profits of the Calumet saw-mill, as the bulk of the shipments from that mill are made during the last half of the year.

There has been some recent unsettlement in the pulp market, resulting in a reduction of selling prices, which is believed to be only temporary, but which will undoubtedly affect the profits for the remainder of the year. With an allowance for the effect of this reduction, and also for the Calumet operations, and with the adjustments mentioned above, the operating profits of the three Riordon mills for the full twelve months' period ending October 31, 1923, are estimated at approximately $2,100,000.

This figure is believed to represent a conservative estimate of the earning power of the mills under fair average market conditions, and contrasts with actual earnings (before the corresponding deductions) in the boom year of 1920 of over $4,000,000, although the entire production of the Kipawa mill in that year was less than 37,000 tons, of which nearly one-third was unbleached pulp.

It should be noted that the results above summarized have been obtained under conditions most unfavorable for the greatest efficiency and economy of operation, because of the pressing financial problems which have continually absorbed the time and efforts of those responsible for the operations. With such problems taken care of by the reorganization, there is every reason to expect that the able and experienced directorate and management to be provided for the reorganized Company will accomplish substantial improvements in operating results.

Gatineau Company

The Gatineau properties are also a recent acquisition, having been taken over in 1920, and their operations also were affected by the depression of 1921. No logging at all was done during the winter of 1921-22, so that the present season is the first full season of active operation under reasonably normal business conditions since the acquisition of the properties. On the basis of careful studies and competent opinions from many sources, it is believed that an estimate of $500,000 average annual earnings from the Gatineau Company as now developed, before interest and depreciation, or about $250,000 over its own interest charges (after the new financing) is thoroughly conservative. Operating profits for the current year are expected to run considerably above this figure.

Ticonderoga Pulp and Paper Company

The annual net earnings of the Ticonderoga Pulp & Paper Company, after all deductions, have averaged for the eight years ending with 1922 slightly over $250,000. The officers estimate the net earnings for 1923 at not less than that figure, and the actual earnings for the first six months of the year have been at a somewhat higher rate. New processes have recently been introduced, resulting in lower costs and improved quality of product, which should be reflected in future earnings. Assuming no increase, however, over the foregoing average of past years, the portion of the average annual profits applicable to the Riordon Company's 60 per cent. ownership of the capital stock should be not less than $150,000.

Combined Earnings

The foregoing estimates total as follows:—

Riordon Company, Limited, (Kipawa, Hawkesbury and Calumet) available for interest, depreciation, income tax and dividends		$2,100,000
Gatineau Company, Limited, (before interest and depreciation)		500,000
Ticonderoga Pulp & Paper Company (proportion belonging to Riordon Company, after all charges)		150,000
		$2,750,000
Annual interest charges of Riordon and Gatineau Companies, approximately	$1,250,000	
Estimated income tax	100,000	1,350,000
Balance available for dividends and depreciation		1,400,000

Expansion of Kipawa Capacity

The above estimate is based on the present operating capacity of the Kipawa mill, which is now unbalanced, some departments being completed to a much larger capacity than the current rate of production, while others are now over-taxed. The plan contemplates the early expenditure of about $2,000,000 for balancing the mill, additional First Mortgage and Refunding Bonds being authorized for this purpose. A recent report made by Mr. Hardy S. Ferguson of New York estimates that the expenditure of considerably less than this amount would add 15,000 tons to the annual capacity of the mill, in addition to which a proper balance between departments should materially reduce the average cost of the entire product. This increase in production, together with the resulting saving in operating and overhead costs per ton, after allowing for the additional interest charges on $2,000,000 bonds to be issued for the purpose, would add from $250,000 to $300,000 to the above estimate of earnings.

Development of Gatineau and Other Properties

The Gatineau Company is presently developed only as a lumber enterprise. With a sound capital structure designed to lend itself to future financing, an admirable site for the construction of a mill (to produce either groundwood, newsprint or sulphite pulp as a study of market conditions and probable future demands may indicate), economical power, ample wood supply, and a ready and growing market for commercial power only a few miles away, it is obvious that the real earning power of the property is yet to be developed.

The Riordon properties include other undeveloped water powers of large potential value, notably a freehold power on the Quinze River capable of developing 32,000 continuous horse power at a moderate cost

Dividends on New Stocks

On the above showing, the payment of the full regular dividends on the Prior Preference Stock, amounting to $700,000 per annum, is believed to be practically assured from the start.

The dividends on the new Preferred Stock will not become cumulative until January 1, 1925. In the meantime annual interest charges will have been somewhat reduced by capital payments, and substantial progress should have been made in developing the increased capacity of the Kipawa mill. It is easily possible that a beginning may have been made on a conservative basis towards the development of additional earning power on the Gatineau property. With favourable market conditions these factors should make possible the payment of the full dividends on the Preferred Stock from the time when they become cumulative; while the ultimate development of the full earning power of the property as a whole holds forth excellent prospects for the Common Stock

The New Directorate

It is announced that the following have agreed to join the board of directors:

Hon. N. Curry, chairman, Canadian Car & Foundry Co., Ltd., and director, Bank of Nova Scotia, Montreal.

Wallace B. Donham, dean, Harvard Business School, Cambridge, Mass.

Archibald Fraser, president, Fraser Companies, Ltd., Edmundston, N.B.

George W. Grier, president, G. A. Grier & Sons, Ltd., lumber merchants, Montreal.

Robert F. Herrick, president, Pacific Mills, Boston.

I. W. Killam, president, Royal Securities Corp., Ltd., Montreal.

George M. McKee, president, Algonquin Paper Co., Ogdensburg, N.Y.

Sir William Price, president, Price Bros. & Co., Ltd., Quebec.

F. N. Southam, vice president, Southam Press, Montreal.

Fred R. Taylor, K.C., Weldon & McLean, barristers, St. John, N.B.

N. A. Timmins, president, Hollinger Mines, Ltd., and president, St. Lawrence Paper Mills, Ltd., Montreal.

Frank D. True, president, Portland Savings Bank, Portland, Me.

Col. James W. Woods, president, Woods Manufacturing Co., Ltd., Ottawa.

Those responsible for the reorganization of the Riordon Company have, during the past troublous years, become fully cognizant of the value of the properties, the necessities for sound development of them and particularly the financing necessities. With such a sweeping reduction in capitalization and indebtedness and the provision of such amounts of capital, the reorganization plan announced, in the opinion of bankers and those interested in the situation, appears entirely adequate; and it is felt that with $8,000,000 of the necessary $10,000,000 provided, the provision of the remaining $2,000,000 is certain to be accomplished, and that the Riordon Company, in a few months' time, will be on a substantially successful operating basis

NEWS

The Rolland Paper Company has just issued a very interesting and attractive bit of advertising in the form of a page from Jacques Cartier's Journal. This is printed on the Company's well known super fine linen record. The quotation from the famous explorer's Journal tells of his interesting description of Montreal Island.

A bit of direct advertising in the campaign being carried out at the present time by the Howard Smith Paper Mills likens a poor ledger paper used in the now popular loose-leaf system to a flat tire on an automobile. Canada may well be proud of the high grade ledger papers produced by our mills at the present time.

The St. Lawrence Paper Mills Ltd.

If there is any pessimist who thinks that the development of pulp and paper mills and improvements therein have reached a limit, he should visit the St. Lawrence Paper Mills at Three Rivers. The Company was incorporated in May 1922, and in May 1923, operations were started. The mill itself was also put up in record time, it having required only seven months from the turning of the first sod to the turning of the wheels. Economy in construction and economy in operation has been the motto of the organization from the start.

The property extends back about 1,000 feet from the water front on the St. Lawrence River, which enables ocean steamers to come directly to the mill; either to bring in or take out goods. At the present time it is found more convenient to use railroad transportation, and pulpwood is brought in direct from the limits on the south shore, from which the haul is only 100 miles. The wood is barked on the limits, and when received at the mill is thoroughly washed before passing to the first manufacturing operation. A large enough pile of pulpwood is carried to provide for any emergencies that may arise. The conveyor from this block pile and washing drum house leads directly into the charging floor for the magazine grinders. When the sulphite mill is built, a cross conveyor will carry the wood necessary for the chemical mill from the main conveyor to the chippers. There are four spur tracks for bringing in coal, pulpwood, etc., and taking out finished paper.

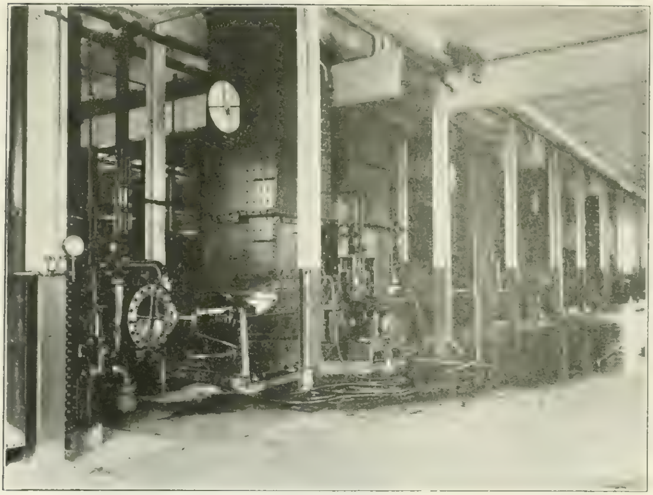
As one approaches the mill, the impression is gained that the plant is idle, but the reason for this is the lack of smoke coming from the tall stack due to the burning of anthracite coal. The high grade anthracite rice coal which is used in the boiler plant is very easily handled into storage and through the stoker, the ash being removed mechanically and all of the carbon being converted into heat with absolutely no dust or smoke to lower the color and quality of the newsprint paper that is produced in the mill. It will be noticed from the illustration that the boiler plant is right at the centre of the mill building so that the steam is brought directly into the machine room where the greater part of it is consumed. This location will also facilitate the introduction of steam directly and without transmission losses into the sulphite plant when this is built adjacent to the boiler house. The economical way in which the steam is utilized will be referred to later on.

The Power Plant

MR. NOAH A. TIMMINS

The whole steam plant is apparently built around the requirement for a heating steam in drying the paper on the paper machine. Incidental to this critical and fairly constant demand, enough power is abstracted from the steam as it comes from the boilers to run the turbine driven electric generators. The necessary heating steam is taken from an intermediate stage in the turbines and passed into an accumulator where it is stored at approximately twenty-five pounds per square inch pressure. From this storage the steam is passed through suitable reducing valves and into the drying cylinders of the paper machines. Any decrease in the demands on steam from the accumulator results in an additional amount of power from the turbine-driven generator, and this extra power is fed back into the main electric circuit. A momentary increase in demand for heating steam is easily supplied from the accumulators. This is a very nicely balanced power system, but with sufficient margin either

View from the West, showing, from the right, barkers, etc.; transformer house; substation; grinder room; screens; machine room; finishing room; train shed.



The grinder room is roomy without waste of space.

way to accommodate ordinary variations in mill operation. Any steam which condenses in the accumulator is returned at a temperature equivalent to about twenty-pounds pressure direct to the boiler.

The sky line of the mill shows that the bulidings were designed for the machines and their operation, and not simply built as a box, and then the machines distributed to the best advantage afterward. This is even more noticeable inside the mill where mezzanine floors have been built to accommodate screening and other intermediate operations, and where such buildings as the wrapping and finishing room are built with only sufficient head room to get proper light and ventilation.

No mill in Canada, at any rate now-a-days, making groundwood pulp and newsprint paper would think of operating without the use of a large quantity of electric power. The greater quantity of power required for a complete newsprint mill is taken by the wood grinding department. In the St. Lawrence mill's plant, the paper machines are driven by electricity generated by steam turbines, but the rest of the mill including the grinder room, conveyors, pumps, etc., are driven by motors and most of the current required is purchased from the Shawinigan Water & Power Company. A very clever arrangement is introduced whereby any excess power generated by the turbines and not required by the paper machines, is passed into the general power lines, and this reduces the amount which has to be bought. The power comes into the sub-station at 6,600 volts and is transformed or stepped down to 2,200 for the grinders, and down to 550 for general motor use about the mill. The switch board for control of circuits and instruments for measuring currents are situated in the grinder house. In an alcove off the grinder room, there is also an electric steam generator which consumes sufficient power at times when the mill is not operating at full capacity to equalize the load, and at the same time relieve considerably the demands on the steam plant. This is particularly noticeable over week-ends and on holidays when the mill is not in operation.

The Groundwood Mill

The wood enters at the top of the charging floor over the magazine grinders and is distributed to long piles running along the outside walls by means of a movable board chute which is suspended from overhead rails; this puts the blocks well out of the way of the workmen, and makes a very safe arrangement. To add further to the comfort and helpfulness of the room, there is generous provision for removing the steam which rises at times from the grinders and also for introducing warm air into the room if occasion demands. The working floor is paved with wood blocks.

The grinder room is equipped with 8 Waterous Magazine grinders driven in pairs by 2,800 horse-power motors. The openings to the magazines are closed at the top by counter-poised trap doors. There are two magazines on each stone, hung from hinges at the top so as to permit the magazines to be swung away from the stones for replacing these as the diameter wears down. These grinders were built for a stone a little larger than the ordinary magazine grinder stone, and the grinders are run at lower than the ordinary speed. This factor is compensated for by a little higher pressure on the cylinders. In this way, quality and production are maintained at the maximum.

The groundwood from all of the grinders is carried by a common channel to the bull screens which are of the improved rotary type. The refuse is washed and again screened to remove all useable fibre, and this recovered fibre mixed with the accepted stock from the bull screens is pumped to the top floor of the adjoining screen and wet machine building where it travels continuously downward through rifflers, coarse screens, fine screens and deckers to be finally passed to the groundwood slush storage tank at a uniform consistency controlled by the Trimbey consistency regulator. There are two wet machines, which are used occasionally to provide a little margin of pulp in storage in case of trouble with the grinding or screening equipment.

Sulphite pulp is at present purchased in lap form and is shredded, mixed with water and diluted to uniform consistency, again scientifically controlled and passed to the storage tanks. These are equipped with liquid level indicators.

Up to this point, it will be noticed that the sulphite pulp has not been pumped at all and the groundwood stock has been pumped but once. The only time

The wet end of the machine room The roof is lower over the dryers. The ceiling is plastered. Note the reversible stands for handling suction boxes.

the stock is again handled by a pump is in bringing it up to the head boxes on the machines from the common machine-stock chest into which it has been charged in automatically controlled percentages of groundwood and sulphite. It may be here remarked that by far the most of the water which leaves the mill goes out in the form of vapor that is evaporated from the paper on the machine. There is no white water waste, and practically no white water remains after its many uses in the various parts of the process. It would almost seem, in fact, that if any obstruction blocked the water coming from the mill, a couple of men could carry away in buckets all that would have to be removed. It is probable that with the possible exception of heat, there is no factor of paper or pulp manufacture which is so little appreciated and so much wasted as common ordinary water. The St. Lawrence Paper Mills have cut water waste and pumpage cost to the absolute minimum. The same may be said of steam and also of labor. In this connection, it almost would seem to the visitor going through the mill that there are not enough men on hand to do the work which is being accomplished. The result is obtained of course by a very carefully planned disposition of machinery and the most economical movement of materials.

The Paper Mill

The paper machine room contains two Fourdrinier machines each 158" wide, built by the Dominion Engineering Works at Lachine, and equipped with the Harland Interlock Sectional Electric Drive. Each has three Bird screens set well above the head box which is built sufficiently high to get a hydrostatic head that will give a velocity to the stock equivalent to any probable speed of the machine wire. An interesting point noticed was that this head box is entirely free from grids or other obstruction to the flow of the stock and eddies are entirely eliminated by a carefully designed discharge orifice. The use of a short wire is made possible by a novel design of the suction boxes and the positions in which these are placed. The first box is set comparatively close to the breast roll, between it and which there are two wire carrying rolls. Baffle plates placed between these rolls prevent water splashing back onto the wire and disturbing the formation of the sheet. Much the greater part of the water removed on the wire is taken out by these rolls and the first suction box. The use of rolls in the box support the wire instead of the usual perforated top plate, an important factor in increasing the suction area and at the same time reducing the wear on the wire. Another wire saving device is a drive on the deckle strap pulleys. It has been found that a very low vacuum will give all the suction necessary to take out as much water as it is permissible to remove on the wire. It is necessary to maintain on the suction couch roll only enough vacuum to give sufficient grip on the wire to pull it round.

There are but two wet presses on this machine, the first of which is equipped with a suction roll. The paper goes to the dryers with a bone dry fibre content averaging 30 % with a variation of between 27 and 34%. The sheet leaves the dryers at a practically uniform moisture content between 7 and 8 %. Compressed air is used for taking the sheet from the couch roll to the felt, and again from the last dryer to the calender while the Sheehan rope back tender takes the paper through the dryer nest. The paper is wound on a Pope reel and then slit on rewinders in the machine room. There is a spare rewinder in the finishing room in case of emergency, but this emergency equipment has not yet had to be used, although the machines are operating at about 800 feet per minute and producing more than their rated capacity and have not yet reached their limit.

A few steps brings the rolls to an elevator that lifts them a few feet to the level of the finishing room where they are run onto a car that is moved so as to line them up according to size and destination. The wrappers are then spread on the floor, the roll given a push and then with the heads in place it is rolled over the scales and picked up by an electric truck and stacked until the adhesive dries and the roll is ready for shipment.

Running full length of the finishing room is the closed-in car platform long enough to accommodate five freight cars and on account of there being a double track, this makes ten cars available for loading newsprint.

The building has been laid out to accommodate another two machine paper mill when conditions make this advisable.

The finishing and shipping department. The store room is at the rear. Beyond is the office.

The appreciation of the City of Three Rivers, for an industry in this kind is shown by the fact that the river road has been diverted so as to pass round the mill instead of cutting cross and interfering with operations going on on the property. The City trolley system has been extended to the mill gates. A very attractive view of the St. Lawrence River is obtained from drafting rooms and office of the chief engineer on the top floor of the screen department.

The engineer has a complete visual record of practically every operation of the mill by means of a very complete system of recording and indicating meters.

The head office of the Company is in the Canada Cement Building; the officers are as follows:

President, N. A. Timmins,
Vice-Presidents, D. Breakey and E. Rossiter,
Secretary-Treasurer, J. I. Rankin,
General Manager, E. Rossiter
Assistant Treasurer and Chief Accountant, A. M. Creighton,
General Superintendent, E. L. McCormick.

The capitalization consists of $2,500,000 first preferred stock and 40,000 shares of common stock of no par value.

SALIENT FEATURES OF THE CHEMICAL EXPOSITION

NAME: Ninth National Exposition of Chemical Industries.

TIME: September 17th to September 22nd, inclusive. Opens 12:00 Noon and closes 10: P. M. each day.

PLACE: Grand Central Palace, New York. Entrance on Lexington Ave. between 46th and 47th Streets.

PRODUCTS SHOWN: Chemicals, Chemical Equipment, Instruments, Containers, General Industrial Machinery, Furnaces, Tanks, Ceramics, Technical and Industrial Books, Dyestuffs, Metals, Valves, Evaporators, Filter Presses, Fertilizers, Mills, Laboratory Equipment and Supplies, Perfume Materials, Chemical Stoneware, Lacquers, Medicinal Products, Belting, Porcelain Ware, Industrial Opportunities and Raw Materials for the Chemical Industry, Asbestos, Fire Prevention Devices, Educational Materials Showing Progress of American Chemical Industry, and a thousand others.

UNDER CONDUCT OF International Exposition Company, Managed by Charles F. Roth and Fred W. Payne. Advisory committee composed of representatives of chemical societies, chemical and equipment manufacturers.

NUMBER OF EXHIBITS: About 400

TIMES PREVIOUSLY HELD: Eight. Seven in New York. Once in Chicago. All under present management.

PRODUCTS PERMITTED TO BE SHOWN: Of American manufacture only unless by special permission of Advisory Committee in certain cases. Canadian products generally expected and admitted as American.

ADMISSION: By ticket. Tickets distributed through exhibitors without charge. Admission fee at door fifty cents plus tax.

ATTENDANCE: Average about 100,000 for eight years. Highest 127,000 in 1921. Lowest 63,000 in 1915. In 1922, 125,000.

MOVING PICTURES: Progress of chemical and general industrial films shown in special auditorium in Grand Central Palace without charge.

SOCIETY MEETINGS IN CONJUNCTION: American Ceramic Society, September 19, at 2:30 P. M. in Grand Central Palace; Technical Association of the Pulp and Paper Industry, Sept. 20, at 2:30 P. M. in Grand Central Palace; Salesmen's Ass'n. of American Chemical Industry, annual meeting and banquet, 12:30 and 7:00 P. M. Sept. 20 at Hotel Commodore; Technical Photographic and Microscopical Society, Sept. 21, at 2:30 P. M. (Members only) at Grand Central Palace.

STUDENTS' COURSE IN CHEMICAL ENGINEERING (New Feature 1923): Series of lectures on practical phases of chemical engineering practice and materials in conjunction with demonstrations by equipment and machinery in exhibits. Lectures daily during Exposition in Grand Central Palace by leading authorities in various fields from 10:00 A. M. to 12:00 Noon. Estimated daily attendance of 250. Prof. W. T. Read, Yale University in charge.

CERTIFICATES OF MERIT: Given by Exposition Management to firms showing products in noteworthy manner. (New features 1923).

OBJECT: To unite under a single roof the new chemical, chemical equipment and allied products of industrial development of the past year, where they may be seen by the prospective buyer, and where they will be of educational value to the laity and technical minds of other industries.

NEXT EXPOSITION: The next Chemical Exposition following the one which will be held this year at the Grand Central Palace, New York, during the week of September 17th, will be in 1925. This year's Exposition offers the last opportunity to see the chemical, equipment and machinery exhibits for a period of two years.

Felts: Their Efficiency And Life*

By MR. F. W. VICKERY, O.B.E., M.I.M.E.

Continued from last issued

The Vickery Cleaner

The limited time at our disposal makes it impossible for me to take you through the many interested and instructive experiments carried out during my investigations. Nor is there time to explain in much detail the principles governing the design and functioning of the machine I utilise to obtain the desired results. The brief description I now propose to give will, however, be sufficient to permit of an understanding of its methods of operation.

In parentheses, I would mention that the machine has one to be known as the "Cleaner," and I shall use this name from time to time, although it is a misnomer.

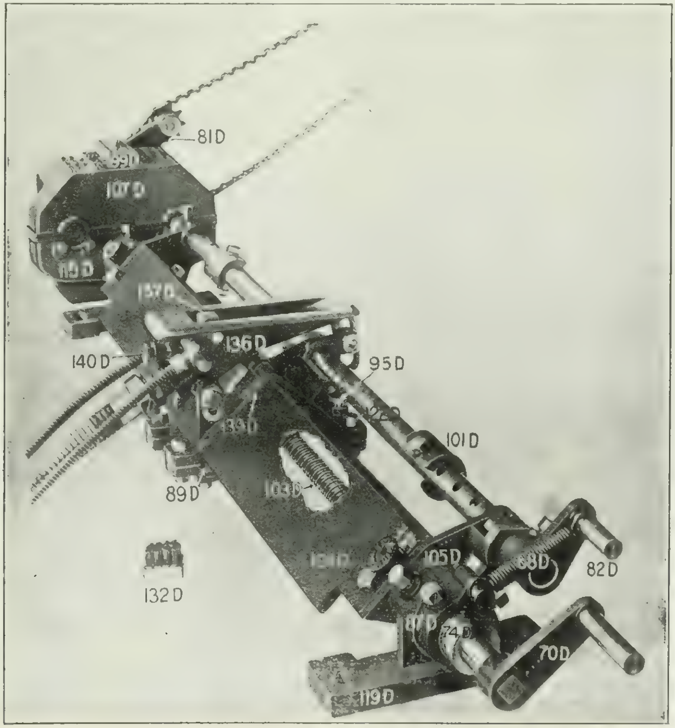
A girder (marked 106 D) is placed across the paper machine in some convenient position. Freely mounted thereon is a piece of mechanism (marked 136 D), which I will call the cleaning box. This mechanism can be moved along the whole length of the girder, and so pass from one side of the paper machine to the other. The felt passes over the top of the cleaning box, and from the first orifice (in 137 D) water is forced into contact with it. The second orifice (in 137 D) is used for steam, which is employed for certain classes of paper to heat the water. For some conditions a brush (marked 132 D) is employed. This is fitted in the cleaning box, and can be placed in position or removed instantly.

I have shown that water is forced into contact with the felt. Some of this water remains in the felt momentarily, but as a part of the cleaning box is kept exhausted of air, the atmospheric pressure on the opposite side of the felt sends the water back into the box, when it is carried away.

The cleaning box is passing continuously backwards and forwards from one side of the paper machine to the other. Its movement, including the reversing action, is entirely automatic. It is an engagement with the screw marked 103 D), which revolves first in one direction and then in the other. The mechanism operating the screw is entirely enclosed in the gear box (marked 107 D and 115 D), and is automatically lubricated by means of an oil bath. There is an oil bath also for automatically lubricating the screw.

Motion is imparted to the mechanism in the gear box by a chain. Where possible, this is connected to a chain wheel on the bottom press roll. If, however, this method of driving is not convenient, there is a complete range of standard methods available.

The orifices (in 137 D) are connected by piping to water and steam respectively. If hot water is available, steam is dispensed with and only one orifice and pipe is necessary. The cleaning box is connected by piping to a suitable exhaust pump.



Unless the conditions are exceptional, one cleaning box is sufficient for machines up to 100 ins. wide, but any number of cleaning boxes can be used according to the width and speed of the machine, or on a class of work where the felt gets "dirty" exceptionally quickly.

The time occupied by the cleaning box in travelling from one side of the machine to the other depends upon the speed of the paper machine and the length and width of the felt. From 30 minutes to two and a-half hours may be taken as approximately correct. Generally, the felt can take two complete turns during the time any particular thread of the warp is being operated upon from the orifices (in 137 D). Put in other words, every thread is cleaned twice during the passage of the cleaning box across the paper machine.

Should special cleaning be required at any particular spot, to remove oil spots or dirt from an extraneous source, the cleaning box can be moved quickly to the desired position by turning a handle (marked 70 D), or, by means of another handle (marked 82 D), it can be made to travel backwards and forwards over a small width of the felt.

As the machine is on the outside of the felt there is not the least interference with the changing of felts. In fact, both during working hours and felt changing, it needs no attention whatever.

What can be termed an island will be seen in the cleaning box. Around this island is a space. As this space is kept exhausted of air, the portion of felt above it is pressed down by atmospheric action. Immediately above the island there is, of course, no such atmospheric pressure. The water ejected from the orifice in the island is a force working against the surrounding atmospheric pressure, and by obtaining a balance of these two forces, the felt, for an area equal to that of the stream of water, can be made to submit to an opening out of the pores. At this point, the felt assumes the shape of a small bulge or blister, in which the threads are "worked" and so restored to their original flexibility. During this process a slight change takes place in the position of the threads relative to each other, and they are made to reject any "dirt" they may be holding. This is taken into the cleaning box and discharged through the pump. When the threads cease to be under the action of the water, they resume their original alignment for the reason that the very small area operated upon is controlled by the much larger body surrounding it.

If nothing but cleaning were required, the felt could quite well be allowed to take up water by capillary attraction. But the process of reconditioning by opening out and "working" the threads is imperative, the water must be forced into the felt and at sufficient pressure to pass entirely through it.

There is a pool of water always on the top of the felt immediately above the water orifice, which is shaped somewhat like a hemisphere and is approximately three quarters of an inch in diameter. In connection with this pool there is an interesting optical delusion, for although the felt is always moving and the water always changing, the pool appears to be quite stationary. It is interesting to watch the effect of lifting the pool off the felt with a spoon.

All the water added to the felt is removed immediately the orifice in the cleaning box is passed. The portion of the felt affected then passes over another part of the box and air is drawn through it. The quantity of air is so arranged that the small portion of the felt through which it passes is left slightly drier than the main body of the felt. The object is to bring the law of capillary attraction into play so that the humidity of the felt can be quickly levelled up by the slight amount of moisture attracted to the drier area from the damper felt surrounding it.

The speed at which the air passes through the felt is from 15,000 to 30,000 ft. per minute, and the quantity which passes through the small area in question is greater than that which usually passes through a full width suction box on a paper machine. As a concrete example, the amount of air passing through a felt on which there are two cleaning boxes is more than that which passes through three felt boxes on a 190-in. machine running on "news" at 500 ft. per minute. Wherever possible, I prefer to use an independent exhaust pump, if only to permit of an examination of the fluid and air taken from the felt

The peculiarity most likely to be noticed by a practical person seeing the cleaning operation for the first time is that the machine works on only a very small area of the felt at one time, instead of on the full width. There is in this feature an outstanding difference between this system and anything previously attempted. Without it my system could not have been carried into effect.

The practical man is apt immediately to visualise the cleaning box travelling across the felt like a plough leaving a nice clean furrow, but producing a corresponding mark across the sheet.

I have found difficulty in explaining this somewhat elusive point when I have spoken of the felt as a whole. The principle involved is so important that I think it is necessary to find a ready means of bringing the point home, and it seems to me that it is best to look upon the felt as being merely a number of warp threads and to regard each of the weft threads bridging the warp as belonging to it.

During the period of time tolerance to which I have referred, the condition of the threads is either falling towards the low limit or being raised to the high limit, so that each thread in turn is continually within a cycle. If the time of tolerance is properly set, no thread can fall below the standard regarded as clean and consequently there can be no marking of the sheet.

When one thinks of the vital importance of constant conditions in papermaking and of the desirability of eliminating the continual adjustments made to compensate for changing conditions, the vast difference will be appreciated between the effect of the principle of "keep constant" and the effect of suddenly changing the nature of a dirty felt by periodically cleaning it.

There are several other questions which will occur to the practical mind. For instance:—

(1) Will the cleaning box in its passage across the machine cause the felt to crease?

(2) Will it cause the felt to "run ashore.?"

(3) Will it cause the felt to run out of square?

(4) Will it cause "blowing?"

The answer to each of these questions is a most emphatic "no."

The Life of Felts

You will now expect me to say something on the life of felts.

It was my intention to place before you figures which I hoped would have given a fairly reliable idea of the average life of felts in a number of classes of work, with and without the cleaners in use.

When these figures were collated, however, it became apparent from the manner in which they differed as between mills making the same class of paper, that condition peculiar to each mill must be introducing very disturbing factors. As the figures varied to such an extraordinary extent, I was forced to the conclusion that no useful information could be obtained from them.

I can, however, bring forward evidence of a very tangible character to show the difference in the results obtained before and after the cleaner is in operation. First, I would say that I have never heard that the life of a felt on a Fourdrinier machine on any class of work has been reduced because of this system of maintaining constancy. On the contrary, I know of many cases where the life has been increased, in several instances and on different classes of work, to the extraordinary figure of 100 per cent. One instance I have in mind is a wide "news" machine running at 500 feet per minute. Before the installation of the cleaner, the average life of the felt was fifteen days, during which time there were on an average fourteen stops for washing the felt. With the cleaner in operation, the felt was run for fifteen days without a stop and was used for a second spell of the same duration. This particular machine runs in spells of fifteen days instead of the usual week.

In the case of another "news" machine making 124-in. paper and running between 400 and 425 feet per minute, there was an average life of two weeks out of the felt before the cleaner was installed. For the purpose of this paper a record was kept when the cleaner was in use. This record shows that the felt remained on the machine for thirty-one working days without a stop for washing and without any attention whatever other than that given to it by the cleaner. During this period, 583 tons of paper came off the machine. At the end of thirty-one days, the felt had to be removed because of damage resulting from an accident in connection with one of the felt rolls: I have not seen the felt myself, but I am told by the practical people at the mill that when it came off the machine it was good for another two to three weeks run. You will be able to form an opinion of the work the felt had to when I mention that the press roll weighs six and a-half tons, to which must be added an imparted pressure of two tons. There was a total pressure of eight and a-half tons on a felt 144 inches wide.

I would say in this connection that it has been found that when the felt is kept constant, there can be greater pressure at the press. The significance of this will not be overlooked. The machineman's foremost idea is to keep the machine running, and if there is trouble with the felt, he can hardly be blamed if he eases the weight of his press. Neither can surprise be felt if, when near the end of his shift, he does what he can to pass on to someone else the burden of felt changing, so incurring the risk of "cockling" and "plucking" at the drying cylinders The average machineman is not closely concerned with the cost of manufacture and he overlooks the fact that by taking less water out at the press he is making an additional call upon the drying cylinders, and, of course, upon the steam supply. I think it will be agreed that the cost of taking water out at the drying cylinders is from ten to twenty times as much as at the press, while there is the added disadvantage of a less solid sheet.

To go to a different class of paper, there is the case of a machine making "browns." The average life obtained from the felt was 72 hours and there were three stops for felt washing during that time. After the installation of the cleaner, the felt run for a full week without a stop and a life of two weeks was obtained, when the felt was good enough to run for a week on the second press.

Finally, to go to the other extreme, I will mention the case of a machine making "writings" of the highest class. On this machine the felt on an average was changed for washing every twenty-four hours. A new felt ran for three days without washing. During its second spell it ran for twenty-four hours and for the remainder of its life for twelve hours Since the cleaner has been in use, I have seen a felt which had been on the machine between four and five weeks and which, as far as it was possible to judge, was fit for another two or three weeks. When I saw this felt, 50 per cent. had been added already to the life previously obtained.

I know of a number of cases where with cleaners installed, the felts have remained on the machines for five, six and seven weeks.

I think these instances cover a sufficiently wide field to show that I have not attempted to bring a few isolated cases to your notice.

Conclusions

With such results before me, I have had little incentive to carry out expensive tests for the purpose of learning whether the maximum results possible are being obtained. I am not going to suggest to you that even a higher efficiency is not possible, but I am convinced that the highest point of economic efficiency has been reached and that any nearer approach to perfection would not justify the heavy extra cost involved in each installation in view of the small margin left for improvement.

You will observe that I have said little about the engineering side of the machine. I do not think there is need to say anything except that the particular construction is a simple and convenient means of carrying the system into effect. It has much the same relative importance to the system itself as the act of applying the mustard plaster has to the diagnosis of the specialist who discovers that a mustard plaster is necessary.

I have endeavoured to make my theory clear to you and I hope that I have succeeded. It is too much to expect that you will all agree. Whatever view you take, however, there is no gainsaying the fact that it has been abundantly proved that on the same felt there is a remarkable difference in the results obtained with the system of maintaining constancy in operation, as compared with mere cleaning.

You have heard my opinion as to the need of constant conditions and I believe you will be in agreement with me on this point. You have heard also my view that constancy cannot be hoped for from the felt itself, and you have before you the remedy I suggest. But I would emphasise that it is impossible to get out of a felt more than is put into it and that the capabilities of the felt are a limiting factor even when my remedy is applied. It follows, therefore, that the felt maker has an opportunity to take a step forward along the road of progress. He has no longer a problem, the very vagueness of which impedes him. He can, for example, eliminate the need to provide against the stress of "roping," and also the need to provide a large amount of nap on both sides of the felt.

It may be that but for the altered conditions the development of felts has reached its highest pitch. We must remember, however, that hitherto the felt maker has stood in a rather isolated position. There has been no real co-operation between him and the paper-maker. I do not say that the papermaker has not been inclined in the past to leave with the felt maker the responsibility of deciding upon the felt to be used and then blame him if it is not successful. Have papermakers realised that there are many factors under their own control which must be taken into account? I am aware that papermakers agree that

(Continued on page 927)

SPANISH RIVER'S GOOD REPORT

With 16.7 per cent. earned on its common stock, after unusually heavy allowances for depreciation and other charges: with the funded debt reduced by nearly a million; with its bank loan reduced by $800,000 or nearly 50 per cent.; with working capital up nearly a million and with surplus increased nearly 100 per cent. to an amount equal to nearly half the common stock issued, the report of the Spanish River Pulp and Paper Mills, Limited, will undoubtedly come in the nature of a pleasant surprise even to a financial community which had expected a great deal. The report is the more encouraging for the fact that it covers the twelve month period ended June 30th, 1923, so that the improved price of its product which came into effect on December 1, is reflected only to the extent of about 50 per cent. in the statement hereunder dealt with.

One of the most notable changes in the report is the transfer of the bond sinking fund reserve to surplus, the latter account being brought up by this addition to nearly 4 1-2 millions. Bonds are being automatically retired, and at an impressive pace, as evidenced in the current report. The preferred shareholders have their participating clause of solace, and now the increased surplus will serve as dividend insurance to the common shareholders against a lean year which might be lurking in the future.

Gross profits for the period under review amounted to $4,008,155, as compared with $3,361,537 in 1921-22, and were only slightly less than three-quarters of a million under the record year of 1920-21. The year's allowance for depreciation was generously increased to $736,560, as compared with $475,975 in 1922 and $628,480 in 1921. Interest charges, through the redemption of bonds and reduction of the bank loan were down to $888,178, as compared with $950,645 in the previous period. Allowance for contingencies is up $50,000 at $200,000. The foregoing deductions leave a net profit for the year of $2,183,417, as compared with $1,784,917. In the two preceding years, it will be seen, the sinking fund allowance was taken as a prior charge to dividends. The action taken with regard to the sinking fund in the report under review shows that the sinking fund need not have been taken as a prior charge, which would show the percentage earned on common in a light more favorable than generally accepted.

The preferred dividend requirement of $603,365 leaves the sum of $1,580,052 applicable to the common shares, this being equivalent to 16.7 per cent. The further deduction of $140,517 as the bondholders' proportion of dividends, leaves a surplus for the year of $778,245, as compared with $97,096. The previous surplus and the addition of the bond sinking fund account bring the total standing at credit of profit and loss to $4,485,000.

As has been pointed out, the working capital of the company has increased by nearly a million dollars. Among the current assets, pulpwood inventories are up by about $400,000 at $5,612,102. Accounts receivable are up by over a quarter of a million at $2,277,683. Cash, at $413,890, is down about $300,000. The reduction of the bank loan from $1,800,000 to $1,000,000 is the most pronounced change among the current liabilities, while accounts and bills payable, at $1,991,504, are up over a quarter of a million.

President George H. Mead, of the Spanish River Pulp & Paper Mills, Limited, made the statement to local newspapermen a year or so ago, that his aim was to see the securities of his company earn for themselves in the markets, a strictly investment status. If financial reports and balance sheets mean anything, the Spanish River report, would seem to indicate that Mr. Mead will realize his ambition long before many people have thought.

With respect to the future, Mr. Mead expects the news print business will continue very fair throughout 1924. The report states that a number of improvements were made during the period, which, with other refinements in mill practice, will result in increasing the daily average production of newsprint from 650 to 700 tons.

WHALEN MILLS SUFFER WITH JAPS

Chaos in the Japanese market, to which the Whalen Pulp and Paper Mill, Ltd., has been selling fully 80 per cent. of its output in recent years, is ascribed as the reason for today's court order appointing a receiver and manager. A financial re-organization is contemplated according to a newspaper despatch from Vancouver, and the receiver is empowered to borrow enough money to keep the plant in operation.

Wage and supply accounts at Swanson Bay and in Vancouver are in default, but the amount was not stated in court.

Application for receivership followed within 24 hours of the return from Toronto of A. H. Douglas, solicitor for the Montreal Trust Company, trustee for bond debenture stockholders, who made the application in court. Mr. Douglas is believed to have been in conference there with T. W. McGarry, K. C., president of the Whalen Company, and a statement was issued over Mr. McGarry's name.

Extremely economic management has been a compulsory condition with the Whalen Company since the present management took charge in order to carry on without infusing new capital. A series of small reverses of the past few months, followed by the Japanese catastrophe, have brought about the present situation. About two months ago, just as the company's shingle mill had a large quantity of shingles ready for the New York market, prices fell there to such an extent that a loss of $25,000 or $35,000 fell upon the Whalen Company. Then about August 10 the water supply failed and a heavy expense was entailed cutting through a new canal, but in the meantime the plant lay idle for several weeks. Shortly after work resumed came the earthquake.

While the Swanson Bay mills are to be kept in operation it is presumed that the production will be curtailed until new markets are found.

The statement issued over the name of Mr. McGarry follows:

"After careful consideration, the directors of the Whalen Pulp and Paper Mills, Limited, Vancouver, have decided at a meeting today not to oppose the application of the Montreal Trust Company, as trustee for the company's bonds and debenture stock, for the appointment of a receiver.

"When the present management took charge in the autumn of 1920, it was found that the financial position was such that without substantial refinancing it might not be possible to continue operations. For two years following, market conditions were bad and at times only one of the three mills was in operation. For the past several months, however, the three mills have been operated to capacity and profits have been shown.

"The attempts to re-finance, however, have been abortive, principally because the terms of the original mortgages securing the bonds and debentures rendered it impossible to issue any new securities. During these three

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PULP AND PAPER NEWS

The Fletcher Pulp and Lumber Corporation, Limited, Sherbrooke, has been incorporated with a capital of $18,000.

The Hon. Esmond Harmsworth, M.P., a nephew of the late Lord Northcliffe, arrived in New York last Friday en route to Canada. Mr. Harmsworth is a director of the syndicate of papers which his uncle controlled, and he will inspect some of the mills which supply newsprint for the Northcliffe papers while on this side of the Atlantic. He also plans to visit western Canada on a vacation trip.

That there is to be a shortage of men in the lumber camps and farms in the Ottawa Valley this fall and winter, and that some 2,000 of the 12,000 British harvesters now in Western Canada could be used in this connection, was the statement of Ontario Government officials here today.

Reports received at the Government offices indicate a record crop for this district, while forecasts that the hay yield will be the heavier since 1912 are being made.

The re-organized Montreal Paper Club will resume activities on Tuesday, September 18. A luncheon will be held on that date at 12:30 at the Mount Royal Hotel, the place of meeting having been changed from the Queen's Hotel. The speaker will be Mr. Guy Tombs, who has just returned from a trip to Europe and he will give his views of the European situation, with special references to the paper trade. This will be followed by a ten-minute discussion on "What's the matter with Canadian cover stock?" This, it is expected, will result in a very interesting talk. An effort is being made to put some life into the Club. The organization can be of real value to the paper trade, if members will give their cooperation.

The contract for the construction of the new mill at Tonawanda for the Ontario Paper Company, Limited, has been let to Mr. Trimble, who has done a large amount of work in building paper mills in Canada. Only one machine will be installed to commence with.

The City of Montreal and the Back River Company, in which J. R. Walker and Company are interested, have come to an agreement which will enable the company to proceed with the scheme for the construction of a power dam below Cedar Island. This agreement safeguards the interests of the city. The plans involve the building of an embankment following the shore as far as Sault au Recollet Church where it will curve towards the head of Visitation Island. The dam will continue along the north side of this Island and on to Cedar Island. From the eastern end of Cedar Island there will be a concrete wall for a distance of about 600 feet and the dam will be built at right angles to this to the north shore, being 1,300 ft. in length, and containing 10 sluiceways, each 40 feet wide, as a safeguard against flooding, in addition to the turbines and power house. There will be a channel on the Montreal Island side of 330 ft.

A telegram received at the head office in Toronto last week from the Fort William Paper Company, Limited, announced the ending of a brief strike at the plant. Apparently in violation of the rules of their own organization the members of the union of pulp and sulphite workers and sympathizing workmen, numbering in all about 200, called a strike on Sept. 4, the crew, which was to go on shift in the morning failing to report for duty. The departments concerned were the steam engineers, the boiler house crew, mechanical and pulp mill workers, mostly unskilled. Operations at the plant were suspended for several days. It was stated that the question of wages was not an issue. The company had accepted the schedules as arrived at by the national organizations. A demand was sent to the company for the signing of an agreement that there would be no decrease in the wages of any classs of employees until a certain future date. The matter was satisfactorily adjusted with the employees.

The Howard Smith Paper Mills have commenced work in connection with the extension to their paper mills at Cornwall, Ont. where the approximate expenditure will be $220,000. This work is part of the general scheme of rounding out the company's plants that has been in progress for about a year. The company is now getting closer to the stage where it will be an even more complete, well-rounded unit in the business of making high grade paper. It is now a self-contained organization from the cutting of the tree to the selling of the finished product in Canada or abroad; in fact the company is dependent upon outside sources of supply or aid only in the transportation of its pulpwood up the St. Lawrence River from its limits and in the purchase of sulphur, soda, pulp etc. During the past year the company has completed a saw mill and rossing mill at its limits in Gaspé. There the company not only cuts its logs to the proper length for pulpwood, but manufactures a considerable amount of timber and shingles besides. Its limits contain a good deal of spruce and pine. It is not considered economical to cut only the pulpwood from timber limits, but the company, by utilizing all the timber it owns, reduces the cost of its pulpwood supplies considerably. The shingles are marketed in Boston, and the lumber cut is largely used for making packing cases for shipping the company's paper from its plant. The extensive additions to the Cornwall plant include a machine room to permit of the extending of the two machines at a later date and they have already erected a pulpwood conveyor with a capacity of about 40,000 cords of wood. The new machine room, which is now building, will increase production by about 25 tons of paper a day. It is 150 x 50 feet and the extension to the finishing room will make that department 220 x 180 feet, three storeys high. The cutting-up plant at Gaspé is working well and wood is being shipped from Gaspé to Cornwall where a wharf and unloading device has been built to handle the wood. The latter is loaded direct from the dock at Gaspé and unloaded direct onto the conveyor at Cornwall. The company state that the system is excellent and will give them a continuous supply of wood at reasonable prices.

In connection with the recent failure of the Home Bank in Toronto it is interesting to note that one of the best known timber experts at the Pacific Coast is at work valuing vast timber limits on Howe Sound and Vancouver Island, which are held as security against loans by the Home Bank. The timber limits were part of the holdings of the Western Canada Pulp and Paper Company, of which H. J. Daly, President of the Home Bank, was Vice-President. S. Casey Wood, of Toronto, and a director of the Home Bank, was also on the board of the Western Canada Pulp and Paper Company whose plant was located at Howe Sound, about twenty-five miles from Vancouver. The company owned its own townsite, which is located on navigable deep water, and is equipped with a dock 600 feet long. The company acquired timber limits immediately adjoining the mill property, sufficiently wooded for over five years' supply. In addition it held 30 square miles of land on Vancouver Island. The company came into existence at the peak of prosperity in the pulp and paper industry. It acquired the plant of the Rainy River Pulp and Paper Company and proceeded to extend the production capacity. Before the company had become firmly established, the collapse came, and created difficulties in the company's financial affairs. The Home Bank of Canada was the banker The company defaulted on its bond interest in April of last year.

From the head office in Toronto of the F. N. Burt Company, Limited, it is learned that the company has sufficient orders on hand to keep them running at capacity for the balance of the year. They state that their customers' shelves are empty, and the plants are finding it hard to keep up with consumption. Manufacturers for the most part are now doing their products up in distinctive packages, and, as the F. N. Burt Company are among the leaders in the manufacture of small paper containers, they are receiving a large volume of this business.

C. Howard Smith, of the Howard Smith Paper Company, Limited, and a former President of the Canadian Pulp and Paper Association, was recently in Toronto and when asked for his opinion on the subject of the proposed pulpwood embargo in Canada he stated that so far he had been very careful not to say anything for publication on the matter. He went on to point out that the Royal Commission was now investigating the whole problem and would no doubt make an exhaustive study of it and bring in an exhaustive report. Mr. Smith added that he was quite prepared to state his views before the Royal Commission and had repeatedly stated in his public addresses, as President of the Canadian Manufacturers' Association, that he is apposed to the exportation of raw materials generally, and does not believe that any country grows great through exportation of its unmanufactured resources. He quite realized that, in some instances, it was impossible to turn everything into a finished product, but he is of the opinion that it should be one of the basic conditions that the export of raw material should be discouraged and the manufacture of the same encouraged in Canada.

George Davidson, Toronto manager of the Howard Smith Paper Company, has gone on a business trip to the Pacific Coast.

S. F. Duncan, Secretary-Treasurer of the Provincial Paper Mills, Limited, Toronto, and his family are spending a couple of weeks vacation in the Muskoka region.

The Boards of Directors of the Provincial Paper Mills, Limited, and the Interlake Tissue Mills, Limited, met in Toronto last week and transacted routine business. Among the out-of-town directors present were S. B. Munro and C. A. Dewing, of Kalamazoo, Mich.

Peter Christie, of the wrapping paper department of the John Martin Paper Company, Limited, Winnipeg, has returned to that city after a couple of weeks spent in Toronto.

George Carruthers, President of the Interlake Tissue Mills, Limited, Toronto, will attend a meeting of the Executive Committee of the Canadian Pulp and Paper Association in Montreal on Sept. 17.

A combined meeting of the Committees on Apprenticeship of the Canadian Pulp and Paper Association Technical Association, the Technical Association of the Pulp and Paper Industry in the United States and the committee of the American Pulp Mills Superintendents' Association, has been called for the Statler Hotel in Buffalo, Sept. 14. The meeting, which has been brought about through the efforts of A. P. Costigane, is for the purpose of taking joint action to study, and, if possible, solve the apprenticeship problem for the industry. It has been called on the initiative of the Canadian committee and Buffalo was selected as the most convenient point for all parties. Mr. Costigane, who is chairman of the Canadian committee is looking forward to gratifying results from this preliminary meeting.

Charles V. Syrett, of the Victoria Paper and Twine Company, Limited, Toronto, has returned from a business trip to New York, Philadelphia and Montreal.

The Fort William Paper Company, Limited, had an interesting exhibit at the big Fall Fair at Fort William last week. The display revealed the progress of the wood from its native state until it comes from the paper machines in rolls of newsprint. The exhibit attracted a great deal of attention.

Major J. I. Hartt, of Orillia, former member for East Simcoe in the Ontario Legislature and a widely known lumberman, having been with the Gilmour Lumber Company of Trenton and the Fesserton Timber Company of Toronto, has been appointed overseer of Crown timber agents in Ontario. His work will be to avoid waste in cutting timber and pulpwood.

M. E. Crouch has been appointed manager of the Porcupine Pulp and Paper Company which is located at Hoyle, Ont., on the T. & N. O., fifteen miles south of Timmins. The company cuts from its own limits, 8,000 to 10,000 cords of spruce a year. This is rossed at the mill at Hoyle and shipped to the Cliff Paper Company at Niagara Falls, N. Y.

Representatives of sixteen daily newspapers in Ontario are touring Northern Ontario. Last week they were entertained by the civic authorities of Sault Ste. Marie and the welcome included an inspection of the mill of the Spanish River Pulp and Paper Mills, Limited.

An interesting address on the employment problem in the timber industry was given by T. A. MacDonald, employment supervisor of the Abitibi Power and Paper Company, at a meeting of the International Association of Public Employment Services at the King Edward Hotel, Toronto, last week. Mr. MacDonald described the difficulty experienced in retaining for any length of time men in the northern districts of Ontario. The difficulty in providing accommodation for families accounted for the reluctance of the married men to stay in the industry, while the unattached men, with a wandering penchant, were hard to retain for any lengthy period. August was a difficult month in which to get men as they were then leaving for the harvest fields. Last year, said Mr. MacDonald, 2,000 new men were taken on by the Abitibi company and 2,700 men left. Many of the men who left returned the next year. Last year the company had men of 22 different nationalities on the roll.

Woodlands Section

EMPIRE FORESTRY CONFERENCE CLOSED

In the formal report of conference activities at the final session of the Empire Forestry Conference at Victoria last Friday, fire protection and silviculture in Canada, were dealt with. The importance of every part of the Empire conserving and augmenting its own resources, of growing coniferous timber in view of the great and increasing drain on the soft wood forests of the world, was emphasized in a resolution submitted by Roland Craig, Ottawa, and seconded by Owen Jones, Australia.

Mr. Craig said that according to Col. Greely, of the United States Forestry Department, the consumption of soft woods in the United States exceeds by four times the estimated annual growth.

Mr. Jones said that the hardwood supplies were sufficient, but the soft wood supplies deserved very serious thought.

The members of the conference were greatly impressed by the extensive waste prevalent in most of the logging operations and saw-mills which they visited. It was the opinion that while this waste is doubtless due in large measure to the local economic conditions of the industry, it is responsible for great loss of such national wealth, and in the interests of both Canada and the Empire's timber supply, should be reduced to a minimum.

The Conference was brought to a close Friday night with a banquet in honor of Lord Lovatt and the other delegates, by the Provincial Government.

The business sessions of the conference terminated late in the afternoon.

Premier John Oliver, W. J. Bowes, K.C., leader of the Opposition; Lord Lovatt, chairman of the Conference; and C. E. Legatt, Chief Conservator of Forests in South Africa; were the principal speakers at the banquet.

PASSING THE BUCK

From *The Halifax Herald*

What is called "passing the buck" is a convenient method of getting rid either temporarily or for all time of pressing responsibility. Politicians find the appointment of a commission a very practical means of "passing the buck."

During the last session of the Canadian Parliament members of the cabinet and private members—with but few exceptions—agreed that drastic measures are needed to safeguard the timber assets of the country. Members of the cabinet were as emphatic as private members on the subject. Indeed, one member of the cabinet made perhaps the strongest statements that were made, pointing out the imminent danger that confronts the country.

It is pertinent to ask this question: Were the members of the cabinet and private members speaking with knowledge: or were they merely filling in time with empty phrases?

We are disposed to give them credit for speaking with knowledge of the subject. They should know. The subject is an open book. It has been investigated over and over again by the officials of government departments. There are reams of reports in existence. It has been discussed and re-discussed and again discussed by forestry associations and expert woodsmen; and much writing has been published in regard to it. Consequently we think that Parliament knew what it was talking about.

But instead of taking action we observe the Government "passing the buck" by appointing a commission: And what a commission! Two city lawyers, a contractor, a lumberman, and a manufacturer for chairmanship, $20,000 is now voted for the expenses of this body whose time is unlimited. $20,000 will probably be only a trifle of the total cost which the people will have to pay for this passing of the buck.

In Tuesday's issue of The Herald, Frank J. D. Barnjum contributed a powerful article over his signature on this subject. We hope every reader of The Herald gave the article studious perusal. It is a damning indictment of the Government's opportunism, and, as Mr. Barnjum says, of " the absolute childishness, folly and utter waste of the people's money in appointing a commission to enquire into a matter that is so perfectly apparent to the merest school boy." Coming from a man who in 1921 was one of the present Government's most active supporters in Nova Scotia, and who for many years before was one of the Murray Government's bulwarks, the indictment is indeed a bitter and convincing arraignment of Mr. Fielding's time-serving opportunism.

STATIONARY ENGINEERS ORGANIZING

The Canadian Association of Stationary Engineers is hoping to organize several new Branches in the Province of Quebec during the Fall months. Arrangements have already been made to hold meetings in Three Rivers, Quebec City and Sherbrooke. Seven Engineers in any locality can apply for a Branch Charter and take an active part in the work.

This organization has for its purpose the advancement of education among Steam Plant Workers, Electricians, Mechanics and other men concerned with the operation and maintenance of Power Plant Equipment.

The work takes the usual form of that done by technical societies in general. The majority of the meetings will be for the purpose of hearing a paper read or a lecture given by a recognized authority on some particular branch of Power Plant work.

These meetings are free to the public and at the conclusion of the paper the subject is open for discussion by anybody who desires to speak.

Any person interested can get full details by writing to H. A. Hatfield, Box 104, St. Henry, Montreal.

WHALEN MILLS TO BURN OIL

It is reported that the Whalen Pulp and Paper Mills, Limited, has completed installation of an oil-burning system at its Port Alice plant, so that the full scale production basis which has been maintained for the past year will shortly be increased.

British Trade News

(From Our London Correspondent)

Canada's Pavillion

This week I paid a visit to Wembley where the 1924 British Exhibition will be held. I find that there is keen and friendly rivalry among the Dominions and their representatives in arranging the construction of their various national buildings. In the Canadian section, workmen from the Dominion are making good progress with the construction of the pavilion; it will be Canada and Canada stamped from top to bottom and in breadth and length. The main building is neo Greek in design and covers 120,000 square feet with a frontage of 415 feet facing the artificial lake. The King and Prince of Wales are taking a great interest in the Exhibition—the Prince being President—and this spells success. Canadians should bear in mind that the exhibition will be the window of a huge store, beautifully dressed and paked with working models and samples of everything imaginable. Never before in the history of the world will the manifold activities of an Empire show such representation. It will be a stupendous undertaking and I hope Canadians have realised it. I am told by one who is behind the scenes that representatives are coming from all the foreign nations in the world to see it and this is a splendid opportunity for Canada to show what she can make and do. Papermakers and pulp men will find plently to see and admire as arrangements are forged ahead.

Canadian Wallpapers

It was quite a treat the other day to hear comments passed on the splendid papers Staunton's are turning out. They have a branch in London and their semi-trimmed hangings and labor-saving devices are appealing to the British public. I also notice that some of the building trade papers speak well of Staunton's products. Their London branch should do well, particularly if the present publicity is kept up. A well-known London merchant said not long ago, "There is no use keeping your goods on the back shelf of your store, as the public will not know they are there unless you tell them through the medium of the trade papers and the advertisements Staunton's must have heard this aphorism.

Pulp Imports

Some good supplies of wood and chemical pulps are arriving from Canada and the latest shipment is 4,500 tons from Clarke City district under the heading of groundwood. The imports in tons of groundwood for July were as follows:

	July 1923	Jan 1922	July 1923
Sweden	11,981	46,412	57,958
Norway	21,957	156, 090	222,636
Canada	24,087	51,390	55,351
Other Places	11,653	9,850	14,826

Shipments of bleached chemical (dry) arrived to the extent of 688 tons in July (13,117 tons for the seven months, compared with 9,989 tons for the corresponding period in 1922); unbleached (dry), 38,662 tons in July (207 tons — 123,590 tons); chemical (wet) 966 tons in July (7,524 against 11,946 in 1922); and groundwood (dry) 4,002 tons in July (15,910 tons an increase of 11,200 tons).

The total imports of pulp of all kinds in July reached 135,051 tons (735,956 tons for the seven months — an increase of 217,000 over 1922).

Owing to threats of strikes in Scandinavia buyers are getting rush orders through. Sellers are also inclined to harden their prices Scandinavia is very unsettled and Canadians should keep a close eye on it.

Canadian Packing and Wrappings

The British market is consuming enormous supplies of packings and wrappings and the shipments reaching the various ports from all sources are heavy. In July 242,616 cwts. are recorded, compared with 194,195 cwts. for the same month last year. For seven months the imports were 2,068,110 cwts. compared with 1,504,358 cwts. for the same period in 1922. The following figures show the position of Canada in hundred weights:—

	July 1923	Jany. 1922	July 1923
Finland	22,590	160,447	205,123
Sweden	87,064	504,748	708,294
Norway	16,685	344,966	369,730
Germany	83,259	238,498	563,372
Belgium	4,750	48,877	42,258
Canada	14,166	53,155	66,296
Other Places	14,098	153,707	131,037

Turning to the imports of newsprint Canada shipped 1,338 cwts. for the seven months, compared with 8,810 cwts in 1922. Newfoundland also shows a falling off in 411,276 cwts. as against 439,437 cwts. for the corresponding period in 1922. Newsprint supplies from all sources are on the decline and in the case of Scandinavia the drop for the seven months past is very considerable.

British Paper in Canada

Canada is buying more British paper of the high class quality than heretofore. British mills shipped during the past seven months 13,357 cwts. of fine quality, uncoated, compared with 6,757 cwts. in 1922. Writing paper sent to the Dominion also shows an increase.

The exports of all kinds of papers and stationery made in the United Kingdom have totalled 2,358,758 cwts., an increase of 1,262,470 cwts. over the seven months of 1922, which means that the export trade has nearly doubled. The position today is: a reduction in imports and an increase in the exports.

"I am Thinking of You"

This was the message which Sir Frederick Becker cabled from Canada to the employees and staff of the Donside Paper Mill (a Scottish mill) whom he entertained. as is his custom, and he added, "I drink to you." During the course of a little talk to mill hands, Major Moore, a son-in-law of Sir Fred, mentioned that during the past year some of the Scottish newspapers had signed contracts for a ten years supply of newsprint, which would account for half of the production of the mill. I believe this is a record and few mills are in a similar position. In securing these contracts no doubt the master mind of Sir Fred has been work. He loves contracts and he is the man to carry them out to the best of his ability. Acccording to reports, Sir Fred and Lady Becker are greatly enjoying their stay in Canada.

BACKUS-BROOKS' GUESTS

Fifty Canadian and United States publishers were guests of the Backus-Brooks Company here over the week-end, to view the construction work on the first unit of what will be the largest paper mill in the world when completed.

More than $4,000,000 have already been spent on development work, and the ultimate plans call for the expenditure of $30,000,000 on hydro power, railway and pulp and paper mill construction. The Backus interests recently gained control of a tract of 4,700 square miles of timber land, and the pulp and paper mills are being erected to utilize the forest products.

UNITED STATES NOTES

The Cushnoc Paper Company and the Kennebec Paper Company, both of which were petitioned into bankruptcy in the United States District Court in Maine last January, are to be operated until January 1 next by trustees. The expenses of the bankruptcy up to the present time have been about $16,000. Plans have been made to bring about a consolidation of both companies and it is expected that a petition will be entered in the Federal Court making such a recommendation. Between June 5, 1922, and June 30, 1923, the net profit of the Cushnoc Paper Company was $38,545 and of the Kennebec Paper Company, $39,753, or a total net profit to both properties of $78,298.

An "automatic teller" a machine intended to serve for the reception of saving bank deposits, has been installed by F. V. Huych & Sons, manufacturers of paper felts and tan jackets, for the employees at their mill in Rennselaer, N. Y. This device for encouraging thrift has been installed next to the pay window and operates so simply that it is claimed it has become almost as popular as the pay window itself.

At the August meeting of directors of the United Paperboard Company no action was taken on the preferred dividend. On May 18 a dividend of 6 per cent was declared on preferred for the fiscal year ended May 26, 1923, payable July 2 to stock of record June 7. This was the first dividend paid on the preferred stock since the regular quarterly dividend of 1 1-2 per cent was passed in November, 1920.

Many possible uses suggest themselves for a special paper recently produced and patented by a Japanese inventor. The paper, according to a report by the Commerce Department, is remarkably strong, and can be crumpled up and washed with soap and water. So durable is this paper that it can be used as a covering for umbrellas, and when soiled can easily be cleansed at home. As a wrapping paper it could be used over and over, being washed when soiled. It is said that the product can be made at a reasonable price. It has a texture somewhat like cloth and is not to be confused with oiled paper.

Reforestation in the upper peninsula and the northern part of the lower peninsula of Michigan will be the first problem to receive the attention of the Lake States Forest Experiment Station of the United States Department of Agriculture. A formal announcement from Washington states that the station will be situated at the Minnesota Agricultural College and is to be in charge of Dr. Raphael Zon, for many years connected with the Forest Service. "It is the plan of the Department of Agriculture to have the forest experiment station do for forestry what agricultural experiment stations do for farming," says the announcement. "To grow timber crops on idle lands unfit for agriculture and to perpetuate hard wood lumber supply upon which the woodworking and wood using industries of Michigan, Minnesota and Wisconsin depend, are the primary objects."

A new type of paper umbrella which, it is believed, will find a demand in the United States has been developed at Foochow, China, according to a report by American Consul Price at that city. This type, which serves equally well as a sunshade and to keep off the rain, differs from the usual in that the paper covering is decorated in attractive designs, the handle is of lacquered wood made in various designs. The paper is exceedingly tough and in this respect excels the Japanese product, according to the reports. At present this type is produced by only one firm in Foochow, which made over half of all the paper umbrellas exported from Foochow in 1922, total exports being about 1,000,000 umbrellas. The present market price of the new type is about $4. per dozen wholesale.

A three story shipping building in course of construction for the Phil-Fibre Box Board Manufacturing Company in Philadelphia is nearing completion. It has been put up to replace the structure recently destroyed by fire. The new building has a floor surface of 10,000 square feet and is the 10th in the group of buildings used by the firm's chip rooms, beater rooms, engine rooms, machine rooms and stock and warehouse buildings. The company is now operating on full time with a 45-ton production of box-board for set up and folding boxes.

A paper making plant for the conversion of Florida sawgrass into pulp will be built in the immediate future at South Jacksonville, Fla., according to the plans of a Florida syndicate. The main building of the plant will cost $500,000 to complete, it is estimated. Employment will be given at the start to about 150 men.

The recently formed Saratoga County Paper Company has plans under way to begin operations by November 1 at the Ballston Spa mill formerly operated by the American Paperboard Company. The mill will be renovated and will be under management of F. J. Talbot, formerly General Superintendent of the DeGrasse Paper Company, Pyrites, N. Y. Various kinds of boards will be made. John G. Jackson, president; James C. Deery, vice-president and W. F. Valley, all of New York City, are the officers of the new company. The entire output of the re-vamped mill will be sold through the Valley-Schuyler Paper Company. With the addition of new dryers and new beaters this plant will make 30 tons daily, white patent crated box-board and colored specialties.

A Boxboard Research Service under direct supervision of experts of the Babson Institute, is being established at Wellesley Hills, Mass., by Charles R. White. Indicating the need of a regular reporting service covering paper board activities, Mr. White points out that there is now no organization functioning with the general purpose of gathering and distributing statistics of important departments of mill activity especially since the Federal Trade Commission has suspended reports relating to paper and board permanently . Mr. White states further that an important field which mills have never covered is the one of industries and concerns who use boxboard as cartons, boxes and containers in packing merchandise. It is obvious, he says, that if mills and box makers can get and distribute to each other reliable data in this field, they will each profit by it, and be able to make some sort of intelligent forecast as to their business needs, to buy and sell at least with a greater feeling of security, if not mutual profit. It is equally important for mills and paper stock dealers to know the facts of their general situation.

The kinks and tangles in our lives would straighten out wonderfully if we would let them come oftener under the influence of the calm, clear life of Jesus.

The Markets

CANADIAN TRADE CONDITIONS

Montreal, September 11. Although the Montreal paper trade has improved slightly, it is still in a quiet condition. As the fall approaches, the chances are that it will pick up, one reason being that the printers, who are now very slack, will receive more orders. The dullness of that section is one cause of the want of vitality in the paper business. Competition is very keen for anything that is going and the margin is none too good.

The reports from the mills are to the effect that orders have dropped off, and that some companies, who were fully employed up to a recent date are now feeling the effect of the lull in the paper industry. From the figures given in a later paragraph, it will be noted that Canada is still freely importing paper, and although some of this is not made here, yet very substantial sums are spent on classes of goods which are manufactured in Canada. It is apparent that the "Made in Canada" sentiment is not fully appreciated by a very large body of consumers.

Some further developments in connection with the industry are under consideration. These include a newsprint mill and a groundwood mill in the Province of Quebec, together with a sulphite mill, which may be constructed in Nova Scotia by a American Paper Company. Another project for a groundwood mill in the Province of Quebec has been postponed until next year. It is thus apparent that Canada is likely to increase her production in the near future, and that the demands on our timber resources will be augmented. This is another reason for conserving the supply, and of limiting the export of raw material.

The imports of paper into Canada during July totalled $719.343, against $629.523 in July 1922. Cardboard and other paper board showed a considerable increase, as while some classes of goods under this heading declined or were not imported, others indicated a big addition, the imports of newsboard and strawboard not pasted or coated being very substantial. Book and printing paper decreased by about $9.000, the U. S. A. contributing $22.068 to the total of $30.856. For the seven months the imports came to $275.218 of which the U. S. A. sent $181.237 and the U. K. $84.484. In wrappings, kraft declined in July by about $4.400, while in other descriptions there was a gain of $3.300, with a total of $44.686. Bonds, ledgers and envelop paper (uncut) advanced from $6,694 to $13.686, the U. S. A. and the U. K. sending about equal values. During the seven months the imports under this heading totalled $61.073 to which the U. S. A. contributed $37.026 and the U. K. $24.038. In July we imported envelopes valued at $7,617 against $8.081 in 1922, the greater part coming from the U. S. A. This brings the total for the seven months to $80,895, nearly all from the States. Hanging or wall paper advanced from $10.114 to $12,080, while roofing and building papers declined from $31.497 to $26,810. Toilet and towels, in sheets came in on a much smaller scale, while, in paper goods, boxes or containers nearly doubled at $81,761. .

The position in newsprint is without change. The call is as firm as ever, and the mills are running fully. In connection with the price for 1924, it is pertinent to point out that, if this remains unchanged, the companies will have to absorb the extra cost involved in the higher bills for camp operations this season. The competition for men for the woods has boosted wages, and those who want help have been forced to keep in line with concerns and jobbers who set the pace.

The paper stock market is steady, with white rags in good demand and a little firmer. Stocks are light. There is a continued strong request for building paper.

In pulp, groundwood remains the feature, with stock scarce and many inquiries for what is available. Sulphite is quiet, while bleached sulphite is slow, although the prospects for a keener demand are bright.

There is a more active call for pulpwood, and the price has hardened a little. The American mills are also disposed to pay a better figure for winter delivered wood. The pulp and paper companies in the St. Maurice district are making arrangements for extensive cutting this season, including burnt over lands. The woods operations will show an appreciated advance in cost, owing principally to the higher wages being paid. At present there is a considerable call for help and men are not inclined to go into the bush unless they can earn more than is possible on road and other work.

Ontario Market News

September has opened up with a distinctly better tone to the pulp and paper market in Ontario, although in some lines of paper manufacture business is not yet what it should be. Book paper mills report only a fair volume of business and few of the mills, outside of the newsprint plants, have orders booked any great way in advance. In the distributing end of the paper business the first week in the month opened up fairly well and most firms report increased orders, both in size and number. Whether this is a continuation of the "spotty" conditions that have prevailed for some weeks past will not be known until the month has further advanced but the fact remains that there is a better feeling in the trade just now than there has been for some time and the belief is expressed in a number of quarters that the fall has better things in store for the trade than the summer produced.

PULPWOOD. — There has been a great scarcity of labor during the past season in getting out pulpwood, owing to the large amount of construction work going on in Northern Ontario in connection with railways, power development schemes, mining operations, etc. Practically every able-bodied man has joined the ranks of the well-paid workers on these jobs and it would appear as if the cutting of pulpwood has been more or less neglected. The men, who formerly felled spruce, balsam and poplar trees during the summer months, have been employed on the extension of the T. & N. O. Railway forty miles north of Cochrane on its projected route to Moose Factory, in the mines and on the big power development project at Quinze Falls. These enterprises denuded the forests of men in the Cochrane district, although about the same quantity of pulpwood as heretofore will be taken out of other parts of Ontario this season. Only about one quarter of the usual amount of pulpwood will be taken out this season in the Cochrane district. Thompson & Heyland, a large contracting company in Toronto, during the season bought and distributed about 40,000 cords and for 1923 and 1924 will handle about 60,000 cords. Contracts were made for 5,000 cords in the section around Cochrane and 15,000 cords in the territory between North Bay and Orillia, and 15,000 cords along the Central Ontario Railway in the vicinity of Maynooth, Haliburton and Coboconk. The contract prices paid are about the same as last year and depend very much on quantity and freight rates. All wood bought by the company must be peeled and this year fully one-third of the stock will be poplar for which there is a growing demand. Last year the quantity of poplar bought was small. North of North Bay the prevailing price for peeled spruce and balsam, f.o.b. cars, was $8 to $10.00 per cord and for peeled poplar $5.00 to $7.00 per cord. South of North Bay on the average about $2.00 more is paid owing to the shortage of haul and the lower freight rates. North Bay is some 227 miles north of Toronto, while Cochrane is 480 miles. The prevailing figure for spruce and balsam south of North Bay is $11.00 to $12.00, while poplar runs from $8.00 to $9.00 and peeled hemlock at about the same figure. The contracts with settlers are generally made early in April for so many cords and cutting starts in May and continues until about the middle of August, after which date it is not possible to peel the wood with any degree of ease. The settler cuts the wood in pole length and, along with members of his family, strips the fallen trees of their bark. The wood is then cut with a cross-cut saw or axe into four-foot lengths and piled up ready for transportation to the railway siding as soon as the snow appears. The roads are generally clear at this season of the year so that advantage may be taken of the first sleighing. As soon as the wood is felled and peeled the settler is advanced fifty per cent. on the contract price and when the product is taken out to the railway track and piled, he is given the full figure with the exception of $1.00 which is held back until the wood is loaded on the cars, for all contracts are f.o.b. cars. Most of the wood purchased by Thompson & Heyland is shipped to Ontario points but a portion of it goes to Ohio and some to New York and other States. The call for poplar is chiefly from the Eastern States and twice as much of this kind of wood has been bought as last year. It is pointed out that whether the proposed embargo on freehold pulpwood goes into effect or not as the result of the investigations of the Royal Commission, it seems certain that the pulpwood of farmers and settlers will be excluded from the provisions of the Act. The statement has been made particularly clear on several occasions by the Dominion Premier. The settler, therefore, is not particularly concerned about the embargo. He knows that he will be able to get rid of his wood at a fair price in any event and with the growing development of the paper industry, the number of new mills in course of erection and the general activity of the pulp and paper trade, it is believed that this fall may see an increase in price.

PULP.—Groundwood pulp is somewhat firmer and is now quoted at from $42.00 to $50.00. There is comparatively little stock in the country owing to low water and the demand is quite strong. Bleached sulphite is selling at from $85.00 to $90.00; unbleached $60.00 to $70.00 and news grade at from $60.00 to $65.00. There is no great amount of activity in any of the pulp lines, although groundwood is moving fairly freely.

NEW YORK MARKETS

New York, September 8. (Special Correspondence.)—There has been a slow but gradual improvement in demand for paper reported this week in the New York market. Buyers have come rather actively in view since Labor Day, and now that that holiday is past and the summer unofficially over, paper manufacturers and merchants look for the market to broaden in its scope and for consumers to resume buying on a scale customary for the fall of the year. Ordinarily there seems to be quite a different tone in business circles prior to and after Labor Day. Before that holiday rolls around vacations are in order, business men seek to get away from their places of business as frequently as possible and for as long periods as their duties will permit. Manufacturing plants slow down while granting leaves to employes and while putting machinery in condition for the usual fall rush, and the entire business world presents an air of nonchalance while thinking more of pleasure than of business. Following Labor Day, however, matters undergo a distinct change. Vacations are over, people return from the country or the seashore, and there is a general buckling down to work which is quickly reflected in a stimulation of demand for numerous articles and a speeding up of manufacturing operations. The fall of the year is proverbially one of the busiest periods of the year in United States industry, and there is every reason to expect that this fall is going to witness splendid business and healthy business conditions.

Very little or no change has developed in paper prices. The tone is much firmer than it was a short while ago, and it appears that any alterations in the near future will be in an upward direction. Paper manufacturers for the most part are now securing enough business to enable them to be more independent regarding prices than they could afford to be in the early summer when paper of most kinds was not moving so well. Moreover, the raw material position is such that manufacturers in frequent cases find their margin of profit on their product is so slight that they are prompted to raise quotations. At the same time there is reluctance on the part of paper producers to advance prices to any appreciable extent. It may be a strange statement to make, but it would seem that a great majority of paper manufacturers in the States today are opposed to any rise in prices of their product. They are more desirous of seeing prices remain stabilized on a steady level, feeling that if this is effected consumers will absorb larger amounts of paper, consumption will be stimulated and better business will result. That is the most desired thing in the paper industry at present—steady demand and better demand for paper. Papermakers want enough business to keep their plants running full; they want supplies to keep consistently on the move, and they want buyers to feel satisfied with the prices they are asked to pay. Profits will then be made in volume business and capacity operation of mills which could never be made with prices out of line and business within narrow limits.

Newsprint continues in a strong market position, doubtless in a firmer condition than any other kind of paper. Publishers are beginning to print larger issues after the summer lull in display advertising, and circulation is growing following the usual dropping off during the hot weather months. Newsprint is moving into consuming channels in a steady way, and it is stated by those in the trade in a position to know that print paper mills with very few exceptions are sold out for the balance of the year, practically all of their output until 1924 being disposed of on contracts. Transient demand for newsprint is good and is commencing to increase, as it invariably does in the fall. So little supply is available in the open market that publishers needing extra tonnage find it necessary to pay premiums to get the paper desired.

Book papers are quotably steady and demand is slowly but surely growing. Fine paper is fairly active. There has been a marked expansion of demand in the past several weeks, and business is still increasing. Coarse papers are in moderate call with wrapping showing more activity day by day as merchants throughout the country lay in stocks for the fall and pre-holiday seasons. Tissue paper is in better demand and prices evince greater steadiness than in some time.

Box boards are moving in fairly large amounts. The movement has not assumed its full proportions as yet since paper box manufacturers are slow to buy this season, most of them placing orders only when in urgent need of board, yet there is enough business current to keep most mills well engaged, while prices are firmer on a higher level than in several months. Plain chip is quoted in New York at $60 a ton f.o.b. this city, and filled news board at $62.50 to $65. Board dealers and distributers report a considerable quickening of inquiry from consuming quarters this week.

A leading manufacturer of paper novelties reports that business this year has been well in advance of last year, July being the only month not showing a substantial increase. The spring holiday line of the house in question is practically sold up, orders in general being booked from six months to one year in advance. No decline in prices is expected but rather a slight upward trend. A constantly increasing demand for crepe and other novelty papers is noted for the making of fancy costumes for masquerades, etc. The same house is putting out a series of booklets with directions how to make a large number of novelties in various forms of paper, sealing wax, etc., the latter being dissolved in alcohol and used as an enamel for decorative purposes.

GROUND WOOD. — The price trend in mechanical pulp continues strongly upward. Reports in the New York trade are to the effect that sales of prime spruce ground wood have been made by Canadian grinders at $50 a ton f.o.b. pulp mills in the Dominion, which establish a new high market level for the present advance. There is practically no domestic ground wood to be had in the open market. Producers who ordinarily have pulp to sell are today buyers, being unable to grind at a normal rate because of low water, and therefore having to look for ground wood from other manufacturers to cover their own requirements. Dealers in this city declare they will freely pay $45 a ton f.o.b. pulp mills for ground wood, which indicates that they can readily secure above this price in sales to consumers, and that the market level consequently is close to the $50 mark. A bullish factor is that grinders, with few exceptions, have their output for at least the next month sold, with some contracted well into October, which means that prices are likely to remain on prevailing high levels for some time, and that no larger amounts of pulp will be available unless water conditions improve considerably to permit producers to increase their grinding.

CHEMICAL PULP. — The outstanding development in chemical pulp is the reduction of $10 per ton in bleached sulphite announced by the foremost domestic producer of this kind of wood pulp. The producer in question for a year or more has been quoting 5 cents a pound f.o.b. pulp mill for his best grade of bleached sulphite and 4.50 cents at mill for the next best grade, which prices have been cut to 4.50 and 4 cents, respectively. This reduction puts bleached sulphite on a lower price level than has prevailed in a long time, and the fact that the leading manufacturer has lowered prices means that all other manufacturers will be likely to cut quotations to the same extent. Whether or not the reduction will have effect on other kinds of chemical pulp is problematical for the moment. Some in the trade seem to think it will; others contend that prices of bleached sulphite were above a parity with other grades of sulphite and that the reduction in the former will not disturb the latter in the least.

Demand for chemical pulps is at best limited. Thus far demand has failed to develop in the volume that many in the trade anticipated at about this time of the year. One reason for this apparently is that paper mills in quite a few cases are well supplied with pulp, while another is that consumers are averse to buying unless actually and directly in need of supplies. Prices are holding on unbleached sulphite, easy bleaching and kraft, but the tone is somewhat easy.

RAGS. — Developments of importance are lacking in papermaking rags. The demand encountered this week has been fair, but that is about all that can be said. Paper manufacturers are still buying in a very cautious way, and seem interested only in supplies they immediately require. At the same time, dealers appear to be moving a fair aggregate amount of stock, and prices are maintained; if anything, the tendency of rag values is upward.

PAPER STOCK. — Complaint is still registered by dealers in New York over the slow buying of waste paper by consumers, yet indications are a fairly heavy movement is in progress while prices have shown little change this week. Low grades seem to be inclining downward but packers are fairly firm in their demands and appear to be holding market levels at around 1.05 cents a pound f.o.b. New York for old folded newspapers, and 80 to 85 cents a hundred pounds for No. 1 mixed paper. Shavings are quotably steady at 4.25 to 4.50 cents per pound for No. 1 hard white and 3.25 to 3.50 cents for No. 1 soft white shavings. Magazines are easy but sellers ask 1.90 cents a pound and higher for good packing of heavy No. 1 books free of ground wood. Ledger stock is quiet, while occasional sales of kraft and manila papers are recorded at steady prices.

Honor is like the eye which cannot suffer the least impurity without damage; it is a precious stone, the price of which is lessened by the least flaw. — Bossuet.

(Continued from page 917)

they know little about felts. How are they to know unless the felt makers educate them? In other papermaking countries this position is being realised and quite recently I have seen striking evidence of what co-operation between foreign felt makers and papermakers has achieved. The problem of feltmaking has now lost its former uncertainty. It is a known quantity except perhaps in what may be regarded as extreme uses and unless the felt maker is content to have the British papermaker placed in a worse position than his competitor abroad and the British papermaker is prepared to accept such a position the felt maker must find a means to educate the paper maker and the papermaker must place at the felt maker's disposal the information he can then intelligently give him. Investigations along scientific lines can follow, and the benefits already obtained, great as they are under unfavorable conditions, can be much increased by using the system of constancy to the fullest advantage

NOTE — This article is from a paper read by Mr. Vickery before the Technical Section (London Division) of the British Paper Makers Association, April 27, 1923.

(Continued from page 918)

years no new securities have been offered or sold to the public by the company and the management has been obliged to not alone carry on its operations out of earnings, but has also been called upon to pay $500,000 on the principal of the bonds as well as heavy interest charges.

"With the full operation of three mills, it became evident that much more ready capital is required, and this cannot be obtained without re-organizing and re-financing. It was hoped that this could have been accomplished without the necessity of a receivership, but the happening of recent events, in particular the shortage of water at Swanson Bay, interfering with profitable manufacture at that plant and the catastrophe in Japan rendering uncertain the marketing of a substantial part of the company's products, have placed the directors in the position of not being able to carry on the company's operations.

"It is felt by the directors that it will not be long until the affairs of the company are readjusted on a satisfactory basis, enabling them to take advantage at their three mills of the expected heavy demand for lumber in Japan. In round figures the total liabilities of the company (including bonds, debentures, notes and trade accounts) amount to about $10,000,000 and the assets $20,000,000.

WHAT CANADA HAS

Expressions of optimism in Canada's future are not wanting at any time, but decidedly interesting is the reply a local mining authority received when questioning a well-known American engineer, who accompanied the party which toured the mining districts of Ontario and Quebec, as to his impressions:

"We have seen, among other things, the greatest nickle producer in the world, visited the greatest silver area in the world, inspected what is undoubtedly slated to be the greatest gold mine in the world, seen the greatest asbestos field in the world, and travelled on one of the greatest railroads in the world," was the reply, indeed a terse summing up of Canada's position and outlook in the field of mining alone.

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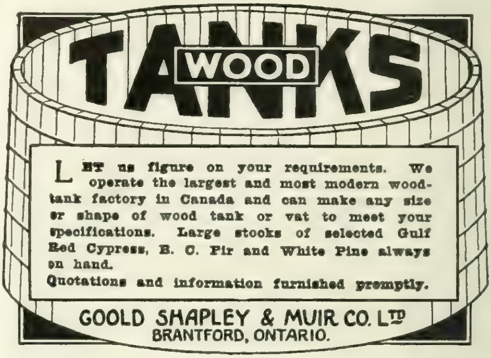

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A Weekly Magazine Devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades

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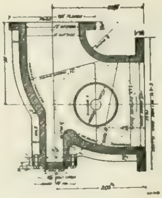

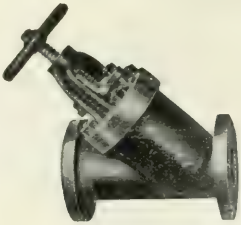

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:-: EDITORIAL :-:

QUEBEC'S PULP & PAPER SCHOOL

It was in the mind of Sir Lomer Gouin at the time he was Premier of the Province of Quebec to institute a School of Papermaking in this province. It remained for his successor, Mr. Taschereau, to carry on and bring forward the plans of Sir Lomer and it seems likely that these aims will soon be an accomplished fact. The Premier had placed the matter in the hands of the Department of Lands and Forests of which the Hon. H. Mercier is Minister, but with the direct responsibility in the hands of Mr. G. C. Piché, the Chief Forester. It is recognized that pulp and paper making, in this province particularly, is directly connected with this department because of the entire dependence, or almost entire dependence of the industry in Quebec upon wood as a source of raw material. It fortunately happens that there is a very well built and well equipped technical school at Three Rivers, right in the heart of the pulp and paper industry of the Province. This school has been carried on for a number of years as a local school with the assistance of the Department of Education and the partial support of the Federal Government through its appropriation for technical education.

By a happy arrangement and generous co-operation of the various parties interested, the old technical school and the new pulp and paper school will be merged under one management, and the funds from several sources will all be available for the good of the whole proposition.

The management of the combined school will be under the direction of a pulp and paper man. This position is to be held by Mr. Paul Emile Piché, C.E. Mr. Piché is both a civil and a mechanical engineer who has had practical experience in the employ of the Wayagamack Pulp and Paper Company and has been, since its establishment, the director of education in French with the Institute of Industrial and Domestic Arts at Gardenvale, Quebec. Mr. Piché is the chief translator for the Institute and has prepared the French texts for a number of the study papers used by the French-speaking students in the correspondence Course in Pulp and Paper Making. Mr. Piché has also assisted in making some of the illustrations for the paper machine section of the textbooks. It is a curious coincidence that Mr. P. E. Piché had never happened to meet Mr. G. C. Piché until the matter of the paper school began to be discussed. Although both bear the same family name, they are not related.

The technical school at Three Rivers opened its doors this week to students in the regular courses; the program for the pulp and paper courses is practically complete, and arrangements are being worked out on the practical points of the curriculum. A definite invitation for the enrollment of students will doubtless be extended in the course of a few weeks. The pulp and paper division of the school will be carried on with the assistance of an advisory committee, and the industry, where convenient to do so, can well give every assistance to this new factor in improving the educational position of those engaged in the industry, particularly in the province of Quebec.

THE NEXT BIG JOB

What the next big job is for the pulp and paper industry to tackle would differ perhaps somewhat according to the viewpoint of the person of whom the question might be asked. Undoubtedly the biggest problem facing the industry is the perpetuation of the pulpwood supply. That question, must be solved outside the mill. There is, however, an exceedingly important question which affects the future of the industry inside the mill, and is not altogether dependent upon wood supply because it applies to all kinds of pulp and paper mills. We refer to the matter of the training of pulp and paper mill workers.

Five years ago, the problem of the education of the pulp and paper mill worker was one that had, for a number of years been claiming the attention of educational committees of the United States and of the Canadian Associations. Realizing the great size of the question, and the greater chance of success by a co-operative attack upon it, a joint meeting of the educational committees was held in Buffalo, and a joint executive committee was formed. The result of this action has been the publication of a set of textbooks on Pulp and Paper Manufacture which is without equal in any language. Success has attended the efforts from the start, although at times a very considerable effort has been necessary on the part of those who have been behind the movement, so that now three volumes are in the hands of several thousand students and readers — something like 7,000 copies altogether of the first three volumes have been printed. Volume IV is promised by the publishers during the month of October, and the material for volume V is rapidly being rounded into shape.

Again last week Buffalo was the scene of a joint meeting of several committees. These were the apprenticeship committee of the Technical Section of the Canadian Pulp and Paper Industry, the educational committee of the Technical Association of the United States, and a committee appointed by the American Pulp and Paper Mill Superintendents' Association to meet and co-operate with the other two. The subject, as might be guessed, was the problem of apprenticeship, which is but using a commonly understood word that embraces both the training and education of workers in an industry. Too often it has meant merely the acquirement of manual skill, and largely on account of that conception, an apprenticeship system, as a vital force in our industry has, to a considerable degree, gone by.

It was soon to be observed from a very thorough discussion of the subject and the enthusiasm on the part of those about the table for improvement in conditions in the Pulp and Paper Industry that apprenticeship is a great big thing, and the development of plans of apprenticeship for this industry is a great big job. Managers and superintendents who have given the matter serious thought, and certainly those who have had to face the problem of finding a successor to an old superintendent or to find a superintendent for a new plant, realize that the Pulp and Paper Industry on this continent is right now in a critical condition. A number of superintendents and managers gathered around the board, and it was clearly seen that there was complete accord on the need for a corps of qualified leaders in manufacturing pulp and paper who know the whole industry from the bottom up by having actually performed all of the operations required, and who understand the principles on which the industry is based.

The old methods of apprenticeship have fallen pretty much into disuse, and there are several fundamental factors which have contributed to this condition, but which need not be discussed at this time. It is quite evident on the other hand that the principle of apprenticeship is still firmly believed in, although at the present time, a satisfactory substitute for the old system has not yet been put into general practice. Out of the joint meeting referred to, there was formed a joint committee representing the three committees and associations whose members sat in conference. This joint committee corresponds to the joint executive committee on vocational education, and we have no doubt that the recommendations which they will bring forth will have a far reaching influence upon the success and future of the Pulp and Paper Industry on this continent. The committee consists of Mr. A. P. Costigane, as chairman, who is also secretary of the Ontario Pulp & Paper Makers' Safety Association; Mr. George Carruthers, President of the Interlake Tissue Mills, and vice-president of the Canadian Pulp & Paper Association; Mr. Ray S. Hatch, manager of the Hammersley Manufacturing Company and ex president of the Technical Association of the Pulp and Paper Industry; Mr. Fred C. Clark, manager of the Pejepscot Paper Company; Mr. Schumaker, chairman of the apprenticeship committee of the American Pulp and Paper Mills Superintendents' Association, and connected with Parker, Young & Company, and Professor Brautlecht of the University of Maine, with Mr. W. G. MacNaughton acting as secretary. This is an exceedingly strong committee which should have, and will have, the full support of the Pulp and Paper Industry on this continent.

COBWEBS

The Institute of Industrial & Domestic Arts has two Japanese students, Mr. Ota Takeo and Mr. Bunzo Shimura. These gentlemen are connected with the Oji Paper Company, one of whose mills, and the one with which they have been connected, is located very close to Tokyo. We have had no word as yet regarding the fate of this mill, or these men, but we sincerely trust that they have all escaped the overwhelming disaster which recently laid waste such a large area in that vicinity.

PAPER UNDER NEW OWNERSHIP

The Hughes Publishing Company, with publication office at 1478 Broadway, Suite 418, New York, has acquired the ownership of Paper, and will continue to publish this well-known journal as a weekly magazine covering all phases of the industry. The management is in entirely new hands and the new publishers announce a broadening and deepening of the policy of the paper. Mr. Burton Millar continues as editor. It is understood that highly qualified technical men will have charge of special departments in the journal. Paper, and those associated with it, have the best wishes of the Pulp and Paper Magazine for its success in their enterprise.

UNITED STATES DYE INDUSTRY

The United States, owing to the notable progress made by its domestic dye and organic chemical industry, is independent of the rest of the world as regards dyes for the first time in its history, according to the annual dye census for 1922, made public recently by the Tariff Commission.

From a stripling industry of seven firms producing only 6,619,729 lb. of dyestuffs in 1914 the business developed until at the end of last year 87 establishments were engaged in what is now described as a key industry. Sixty-six per cent more dyes were produced in 1922 than in 1921. Production last year aggregated 64,632,187 lb. Imports totalled 3,982,631 lb. and exports 6,956,593 lb., the Commission estimating that manufacturers of the United States produced 93.5 per cent of the dyes actually consumed in this country last year — Textile Recorder.

STEAM COSTS

BY A. B. OILER

Steam costs are getting closer attention from paper mill men that from most manufacturers, and the average price paid by the paper trade per thousand pounds of steam will compare favorably with the price paid in any but the steam electric power business as represented by the modern central power station.

The up-to-date electric station makes steam for less than we do because the men who buy the fuel and those who use the steam are just as responsibly concerned for the cost of output as the men who burn the coal. Probably the paper manufacturer would pay less for his steam if he too made one man responsible for everything from the purchase of the fuel and supplies to the control of the product about the mill.

In any case every man whose work can cause the steam cost to vary, should be responsible in proportion. This would make for close co-operation between the purchasing agent, the engineer and the mill superintendent. We do not know of a case in a paper mill where the buyer of the fuel or the user of the steam is considered to be in any way responsible for steam costs. Yet it is plain that the total cost for heat and steam power depends on the quality and price of the fuel and the quantity of steam used just as much as it does on efficiency in the power house.

We don't want to step on anybody's corns, so please understand that by purchasing agent we mean whoever makes the decision to buy the fuel. If the coal is purchased on a yearly contract very often the manager and the purchasing agent working together decide where to buy it, for the money involved amounts to a very considerable sum, particularly where it is necessary to haul the coal a long distance. When the contract is placed by the year there is every opportunity between times for these men to forget the details of this highly technical and complicated job, assuming that they have previously taken the trouble to learn how to buy the coal that pays the plant best.

What does the man who buys the coal have to know? Well first of all, that coal which gives good results in one plant, may not evaporate equal quantities of water when burned under a different boiler and handled by other firing methods. Coal may be offered which shows a good analysis and a high heat value, but only careful tests under actual operating conditions will disclose the kind that will give the greatest purchasing power to every $1.00 spent.

To buy coal successfully, one must have a good general knowledge of the output of all the pits worked by every coal company offering a contract. This is because even the coal from one pit will vary in quality, while the difference between two seams in the same district may be very great indeed.

Such information is obtained mostly by reference to Government reports prepared especially for just such a purpose. In case the mine is not listed, or if the coal company is shipping a mixture of coal fom several pits the purchaser may get the figures from the agent, though it will be difficult to make any company submit a guaranteed analysis unless the contract is for a large quantity of coal.

The Government reports usually give:—

1. The "proximate" analysis, showing the percentages of moisture, volatile matter, fixed carbon and ash in the fuel.

2. The "ultimate" analysis, which shows the chemical constituents, Carbon, Hydrogen, Nitrogen, Sulphur and Ash

3. The Calorific or Heating Value in B. T. U. per lb.

The analysis is very useful for specifying the coal to be supplied and for checking up, after deliveries begin, to see if it is as per specification. Unfortunately there is more than one method of making the test which give these figures and several analyses of one car load may vary considerably unless the very best equipment is used and the chemist is well skilled in the work. Besides, as mentioned before, the coal will vary somewhat though all from the same pit. Therefore it is necessary to make allowances and combine the information in the reports with that from tests at the plant.

The same is true of the heat value. This column gives the buyer a line on what may be expected, but the information has to be used with good judgment, for the analysis only shows the quantities of each simple substance present in the fuel, and the B. T. U. developed when they are burned under a fixed set of conditions. It cannot show how the elements are combined or what heat will be produced when the combination is burned under different conditions.

How convenient it would be for both buyers and engineers if all furnaces and stokers gave equally good results with a high B. T. U. coal regardless of its other characteristics. But they do not. In a small furnace there is not room to burn a very gaseous coal with economy. An arch may raise the temperature of the furnace and affect both the ignition of the coal and the formation of clinker. Poor draft may prevent the use of any but the larger sizes of free burning coal. Moisture, size of lump and other things affect the efficiency so, that no matter what information is in hand about the fuel, it should not be purchased till a long and thorough test has been made at the plant where it is proposed to use it.

The man who buys coal has to know all these things and more. But enough has been said to prove that one in the position requires a thorough knowledge of steam plant operation if the cost of steam is to be brought down to the figure it should be.

As regards the share in steam costs of the men who use the steam. Papers have been published in this magazine at various times giving valuable information on the use of steam in the mill, and we can add nothing more to what they have said on the necessity for economy. The very fact that on occasion a certain mill makes a ton of "news" with 6,000 lbs. of steam and at another time uses 7,000 lbs. for the same output, is proof enough that the mill men control steam costs to a great extent.

These papers to which we refer show that a man who works in the mill is obliged to study steam to advance himself as a paper maker. We can show, that willingly or otherwise, he must study if the responsibility for the cost of steam is properly placed. The use of instruments in the boiler house has brought this about. For years it was the custom to call the man in charge of the steam plant "on the carpet" any time it was considered that the cost of steam was too high.

The natural result has been that wide awake engineers have grasped every opportunity to put equipment into the power house which will not only show them what to do, but furnish evidence that they have done their work properly.

If the engineer is called upon to justify himself he will show that the amount of water evaporated per lb. of coal has been satisfactory. For proof he will likely produce charts from some kind of water meter showing how much feed water has gone into the boilers and from a recording thermometer showing the temperature. He may also produce boiler meter charts showing how much steam each boiler has made and flow meter charts showing what amount went to each department. Probably he can show by a chart from a pressure recording gauge that the boiler pressure has not varied materially, and by a CO_2 Recorder chart that the fuel has been burned to advantage.

Whether the firm requires it of him or not, he usually keeps a log book showing the cost of the coal per ton and the number of tons of paper made each day. From this log book he can tell whether he has been furnished with suitable coal and if the mill has wasted steam. In any argument over costs the engineer has the advantage, but his position in the paper mill business is a rather peculiar one.

When he takes charge of the boiler plant he gets certain equipment as a legacy from the man who put up the power house. With this equipment and fuel purchased by another man, he has to make any quantity of steam demanded by the men in the mill. He is employed to carry through the scheme of power generation. Since fuel has become the big item in the cost of steam, his particular business has been to see that all the heat is taken from it that it is possible to get out of it with the furnaces and boilers in his charge. His work is of a technical nature but his success depends on the degree of co-operation between his department, the office and the mill, in which the men are not usually possessed of a technical education.

The purpose of this article is to draw attention to the fact that by close co-operation between departments steam costs may be reduced, but it is necessary for all concerned to have a working knowledge of the generation and use of steam.

Therefore the Pulp and Paper Magazine has arranged to publish a series of articles on the subject which will be of service to any one responsible. It is hoped that these articles will cause discussion of points particularly interesting to the paper trade and that readers of this magazine will write to give their views on the various subjects taken up.

PAPER COMPANY BUYS NEW TYPE BOILER DOORS

The Consolidated Water Power & Paper Co., Biron, Wis., has placed an order for two Westinghouse new type boiler bridgewall furnace doors. These doors will be installed in connection with a Westinghouse new model multiple retort underfeed stoker recently purchased. The frames of these doors are set outside of the brickwork and hence are not exposed to the furnace heat.

Duty's path always opens for us as we go on—not before we start, but as we obey and move forward.

CONFERENCE DETAILS BEING PERFECTED

The program for the Fifth Fall Business Conference of the American Paper and Pulp Association and allied associations, gives in condensed form an outline of the three days of meetings which will mark the week beginning Oct. 8. Where not otherwise indicated the rooms are at the Drake Hotel.

Several of the meetings will continue for more than a single session. The Gummed Paper Manufacturers and the Woodlands Section on Tuesday, and the Wrapping Paper Manufacturers on Wednesday, will continue their sessions through the afternoons of those days. The Salesmen's Association will have its usual buffet luncheon at noon, followed by the regular program, and the banquet in the evening.

The Thursday program will be confined to the joint conference of the manufacturers and merchants in the forenoon, and the joint luncheon in the afternoon, at both of which there will be speakers exceedingly well worth hearing.

The details of the various meetings are rapidly being perfected. As has been the case at the last three meetings of the American Paper and Pulp Association there have been secured reduced railroad rates for those attending, as well as for those members of their families who may accompany them. Those attending, however, should not fail to secure the usual reduced rate certificates upon purchase of their going tickets, and turn these certificates in at the registration desk immediately upon arrival at Chicago.

Program for Fifth Fall Business Conference of the American Paper and Pulp Association and Affiliated Organizations

Association	*Room*	*Time*
	Tuesday, October 9	
Gummed Paper Manufacturers	M-15	10:00 A.M.
Woodlands Section	M-18	10:30 A.M.
Tissue Paper Manufacturers	Blackstone	10:30 A.M.
Cover Paper Manufacturers	Blackstone	2:30 P.M.
Veg. Parchment Manufacturers	M-9	2:30 P.M.
	Wednesday, October 10	
Writing Paper Manufacturers	Blackstone	10:30 A.M.
Wrapping Paper Manufacturers	M-17	11:00 A.M.
Salesmen's Association	Club Grill	1:00 P.M.
U. S. Pulp Producers Luncheon	G	1:00 P.M.
Cardboard Manufacturers	M-16	2:00 P.M.
Sulphite Bond Division	Blackstone	2:30 P.M.
Writing Paper Manufacturers Luncheon	Blackstone	2:30 P.M.
Salesmen's Ass. Banquet	Ball Room	7:00 P.M.
	Thursday, October 11	
American Paper and Pulp Association Joint Conference with National Paper Trade Ass.	French Restaurant	10:30 A.M.
American Paper and Pulp and National Paper Trade Ass. Joint Luncheon	Ball Room	1:30 P.M.

POLISH ARTIFICIAL-SILK FACTORY

At present Poland has one artificial-silk factory, employing 3,200 workmen. During April and May, 1923, it produced 71,000 kilos of artificial silk, of which 10,000 kilos were the viscose and 61,000 kilos the cellulose product. The silk is sold in the local market and is used for making stockings, laces, etc. A second factory, which was manufacturing artificial silk, was destroyed during the war and has not been rebuilt. — U. S. Commerce Reports.

It is better to build a life than to make a fortune. Character is a greater accomplishment than riches.

China's Phonetic Script and the Linotype

The printed word is not only the world's greatest educator, but the paper maker's best salesman. To develop a reading public in the vast population of China, the cheap newspaper is a primary essential. The combination of cheap newsprint and mechanical typesetting has made the present power of the press possible. Adapting the Linotype to the Chinese language and the Chinese alphabet to the Linotype is an accomplishment for which the educational forces of the world as well as the paper makers owe the Mergenthaler Company, of which Philip T. Dodge is president, a large debt of gratitude and their sincere congratulations.—Ed.

Making a Simple Type System of Forty Symbols Out of Chaos of Forty Thousand Ideographs

None since the first slugs of English, which so happily named the Linotype, have had quite the potential interest of the slugs of the Chinese characters that make up the insert on this page.

The forty tongues to be set on the Linotype up to this time marked the evolution of a machine; the lines of Chinese Phonetics script signalize revolution in lives. The National Phonetics Syllabary, "Chu Yin Tzu-Mu," brings a literate China within reach at least of our thought. It was not for the coolie to know how to read and write more than a very few of the beautiful, difficult ideographs; soon he may hope to read the daily news, set up by Linotype, as children certainly will do.

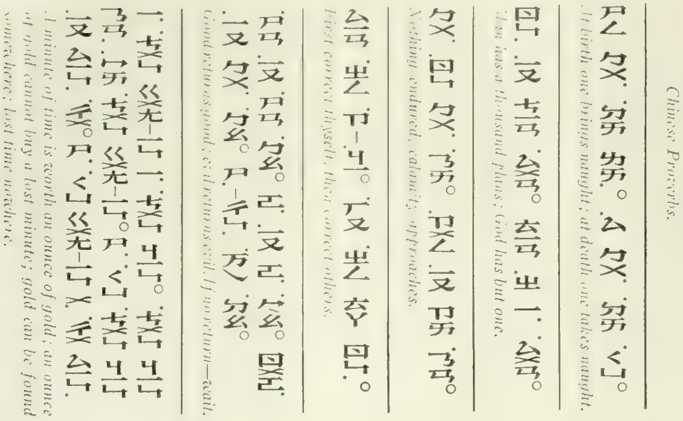
China became a republic in 1911-1912. Close upon that tremendous event a body convened in Peking, upon Government initiative, to consider the subject of a phonetic alphabet of the Chinese language to the end that a common pronunciation might further education; for while written or printed Chinese means the same anywhere to any Chinaman who can read, Chinese as spoken in one province may be quite unintelligible in another.

The outcome of this council, brought about by the Bureau of Education, where met and advised together well-known phonologists, teachers and missionaries, and to which had been invited official representatives from the different provinces, was the agreeing upon a standard pronunciation for some 7,000 or 8,000 characters, which embrace the ancient ideographs in common use, and adopting to indicate such pronunciation thirty-nine symbols, made up of simple Chinese stroke characters.

The Phonetic Alphabet. Arranged in Chinese Order

Key Character	Phonetic Symbols	Key Character	Phonetic Symbols	Key Character	Phonetic Symbols	Key Character	Phonetic Symbols
Finals		Medials		Initials		Initials	
阿	ㄚ -A	衣	ㄧ -I-(Y-)	基	ㄐ CH(I)-	百	ㄅ P-
惡	ㄛ -O	五	ㄨ -U-(W-)	其	ㄑ CH'(I)-	拍	ㄆ P'-
軛	ㄜ -Ê	於	ㄩ -Ü-(YU-)	尼	ㄬ GN(I)-	墨	ㄇ M-
也	ㄝ -EH			希	ㄒ HS(I)-	縛	ㄈ F-
						未	ㄪ V-
愛	ㄞ -AI						
危	ㄟ -EI		Tone Chart	直	ㄓ CH	得	ㄉ T
嗷	ㄠ -AO			尺	ㄔ CH'-	特	ㄊ T'-
歐	ㄡ -OU			石	ㄕ SH-	訥	ㄋ N-
				日	ㄖ J-	勒	ㄌ L-
安	ㄢ -AN						
恩	ㄣ -(Ê)N			子	ㄗ TS-	格	ㄍ K-
昂	ㄤ -ANG			此	ㄘ TS'-	刻	ㄎ K'-
啍	ㄥ -(Ê)NG			私	ㄙ S(S)-	額	ㄫ NG-
兒	ㄦ -ÊRH					黑	ㄏ H-

The phonetic script, like the classic Chinese, is to be read from top to bottom and across the page from right to left, as see the selection following:



Chinese Proverbs.

At birth one brings naught; at death one takes naught.

Man has a thousand plans; God has but one.

Nothing endured, calamity approaches.

First correct thyself, then correct others.

Good returns good; evil returns evil. If no return—wait.

A minute of time is worth an ounce of gold; an ounce of gold cannot buy a lost minute; gold can be found somewhere; lost time nowhere.

The symbols are simple stroke characters to be found in many of the forty odd thousand ideographs of the Chinese written language, to which have been assigned syllabic sounds, and with these thirty-nine or forty symbols, alone or combined, and a tone mark—because pitch of voice in uttering it gives to the same Chinese word widely different meanings—Mandarin speech is reproduced in print. And Chinese as it is heard in the streets of Peking and Shanghai may be read in newspaper columns set by the Linotype.

Perhaps one-half of the number of Chinese words may be represented by two symbols, a very few by three, and the rest by a single symbol. Not one of these thirty-nine phonetic symbols has more than five strokes; a Chinese ideograph may have as many as sixty-two. For an example of a monosyllable in common use take "Shih," as the pronunciation would be expressed in Roman letters. Giles' Chinese Dictionary enumerates a hundred ideographs having a multiplicity of meanings—alone or in combination with other ideographs—but all pronounced "Shih" in one or other of the different tones.

"Chi" may mean indifferently "chicken" or "excited," as you utter it in a level tone of voice or with a slightly rising inflection. But the phonetic spelled "Chi's" look alike, so to distingush one from another the intonation must be indicated, as is done by a dot at one of the four corners of a symbol, or by its absence when a word is in the first tone. (See tone chart.) To the occidental as to the oriental ear these tones are easily distinguishable, but for the tongue to use them with a fair degree of fluency is quite a different matter—to any but Chinese, to whom they come as naturally as speaking at all.

The Chinese phonetic script today is a recognized medium of intercourse in the Mandarin-speaking provinces; never to displace the ancient ideographs, or idea-characters, but rather to interpret them to the less fortunate of China's millions to whom the "Chu Yin Tzu mu" will be the open sesame to literacy. This simpler Chinese written speech is being taught in the schools of China under Government control as well as in the mission institutions. A year ago in this country it was known of only in a vague way excepting perhaps among a handful of people here and there, in New York and San Francisco mainly, who were concerned in its promotion. Now the Phonetics are included in the teaching of Chinese in the large universities, East and West, and of particular significance from the news print point of view, the system is coming to be known among the unlettered Chinese of our own population.

Soon there will be appearing print of various sorts in this simplified Chinese. The Scriptures and lesson-books, foreign missions propaganda matter in general, made up the early issues, as a matter of course, since it was persistent zeal for the betterment of the illiterate emanating from the missions which has been by far the greatest factor in spreading the new script.

But now the movement goes on of its own momentum, and is reaching the daily newspapers. For the present, the Phonetics may be printed alongside the character, in which case the double purpose will be served of leading literates to study the new script and bringing more knowledge of the ideographs to those who have learned to read the Phonetics. A little while, and one foresees Phonetics editions, for the Linotype has joined the allied forces over there fighting China's powerful enemy, illiteracy. Who listens intently may hear the matrices clicking out lines, columns, pages, in inexhaustible quantity, for the new generation of readers.—N. P. S. B. Bulletin.

T. J. BURKE ALSO SCRIBE FOR SALESMEN

T. J. Burke, Secretary of the Cost Association of the Paper Industry, has become Secretary of the Salesmen's Association of the Paper Industry. The offices of both associations will continue to be in the suite occupied by the American Paper and Pulp Association. Dr. Hugh P. Baker was for the early part of its career secretary of the Salesmen's Association, while it was being developed to its present importance, and later O. M. Porter relieved him of the duties of the salesmen's organization. The importance of the work of the parent Association, however, has grown to such an extent that it was thought inadvisable for the American Paper and Pulp Association officers to continue to handle the affairs of the salesmen so the duties of the secretaryship were taken over by Mr. Burke.

The Action of Non-Chlorinated Oxidising Bleaching Agents on Cotton

By S. R. TROTMAN

Although compounds of chlorine are used almost exclusively for bleaching cotton, it is a mistake to suppose that they are the only available ones for this purpose. In the past, however, most of the work in connection with the others has been done by foreigners. In pre-war days there was a great disinclination on the part of British manufacturers against even trying anything new, and people who propounded fresh ideas were regarded as cranks. Even now, we are not beyond reproach in this matter. Chemists work out new processes in their laboratories, some of which may contain good ideas which only need the experience gained from large scale experiments to make them commercially successful, and yet 90 per cent of their work never gets beyond the journal in which it was originally published. In Germany, at any rate in pre-war days, it was quite different, as it is to-day in America. Thus it happens that while we are content to go plodding on with things we know, others are pushing into new fields of research where there are chances of profitable discoveries. The problem of the possibility of utilizing the non-chlorinated bleaching agents is one well worth investigation, and a review of what has been done hitherto may be interesting.

One may begin with air as a bleaching agent. Although it plays a part in the bleaching of linen it has not been used successfully for other fibres. Air, *per se,* is of little use as a bleaching agent, in the absence of diffuse sunlight. Any bleaching action it possesses is connected with the ultra violet rays and is a slow process. Goods have often to be bleached and delivered within the space of a few hours. This alone would make the use of air impracticable. But interesting attempts have been made to accelerate the process. Muller, *J. S. C. I.,* 1910 1200, proposed to treat cotton in the following manner It is heated under pressure and at a high temperature with either a solution of sodium hydroxide or milk of lime, while, at the same time, a current of air is passed through the liquor in such a manner as to be distributed to the goods. An oxygen carrier, such as manganese carbonate, is added to the lye to assist in the oxidation. Later, *J. S. C. I.,* 1911, 534, further details were given. Sixty kilos of cotton and 1,000 litres of a one per cent. solution of sodium carbonate containing 20 grammes of manganese sulphate are put into an autoclave, taking care that the goods are covered completely with the liquor. The lye is then heated for two hours at a pressure of two atmospheres, air being excluded. A current of air at a pressure of 1 to 15 atmospheres greater than the steam pressure is next directed on to the surface of the lye till the bleaching of the cotton is complete. The lye is then run off and the cotton is washed, treated for a minute with a 0.5 per cent solution of sodium bisulphite to remove the precipitated manganese hydroxide, washed again and finally dried. Higgins, *Bleaching,* page 122, says that a German company was formed to work this patent. A small quantity of manganese sulphate was added to the caustic soda lye in the keir, and the goods were boiled for two hours. Air was then admitted at a pressure of 3 1-2 pounds, and the goods were boiled for a further twelve hours under the influence of the steam of air. It was claimed that the goods can be both boiled and bleached at the same time, but a bath of sulphurous acid or sodium bisulphite is required to remove the precipitated hydroxide of manganese from the fabrics.

Certain obvious difficulties occur to chemists, the chief being that sodium hydroxide in the presence of oxygen is very liable to convert cellulose into oxycellulose. In order to avoid this, careful scientific control would be required and, as Higgins points out, such control is not looked upon very favourably by bleachers. But the process is interesting as indicating the greater readiness of other nations to investigate on the large scale the possibility of applying laboratory results to goods in mass, and there is no doubt that the method gives quite good results in a laboratory. In passing, one may note that it has been claimed that strontium hydroxide is much less likely to damage cotton in the presence of air than other alkalis, though, of course, it is too expensive to use to-day. Another very similar process was patented by Anders, *J. C. S. I.,* 1918, 121a. He wets out the cotton with hot milk of lime and then bleaches it in a bath containing milk of lime and an oxygen carrier, by means of a current of air. The work of Dorée and Dyer is interesting in connection with these processes. They found that when cotton fabrics were exposed to the light from a Cooper-Hewitt mercury vapour lamp at 30 deg. Cen. to 35 deg. Cen. they gradually became yellow, lost tensile strength and gave reactions for oxycellulose. They concluded that ultra violet rays, in the presence of air and moisture, act in two ways (1) by a specific physical action causing disintegration of the cellulose, and (2) by the development of ozone which under the conditions of experiment converts cellulose into oxycellulose.

Prolonged exposure to air even at ordinary temperatures causes gradual loss of tensile strength and an increase in the copper values of cotton. This is particularly marked in the presence of metallic oxides which act as catalysts. But in all these cases the ultra violet rays are an essential factor. The processes of Muller and Anders would exclude these, and it is possible that, in their absence, bleaching with the aid of a catalyst may be carried out without the production of oxycellulose. The point is worth investigating further. In the bleaching of paper pulp with bleaching powder, L. T. Thorne, *J. S. C. I.,* 1914, 33, 729, found that if oxygen gas was introduced during the bleaching from 30 to 50 per cent. of the bleaching powder could be saved.

From air one proceeds, naturally, to ozonised air. The commercial production of this is not difficult where an electric current either alternating or direct is available. Suitable apparatus is made by the "Ozonair" Co. Ltd. Ozonised air has been made use of successfully to replace the ordinary "grassing" process in linen bleaching. It is claimed by the Ozonair Company, that it is also satisfactory for woollen fabrics in concentrations up to 0.5 grammes per cubic metre. The presence of a small quantity of sulphuric acid or turpentine, which act as solvents for ozone appear to accelerate its bleaching action.

Ozone, like all other bleaching agents, must be used carefully with cotton, since it gives rise to oxycellulose if used in excess.

One of the best of the non-chlorinated oxidising bleaching agents is permanganate of potassium. It has the advantage that it can be applied to every known textile fibre, and is therefore specially suitable for mixed fabrics, such as unions. While it is used to a limited extent for silk and wool, it is practically never made use of for cotton. Its comparatively high cost is naturally an objection. But the actual cost of bleaching is comparatively little compared with that of lye boiling, and the quantity of permanganate required by a well-boiled cotton is extremely small. One pound of potassium permanganate at 10d. per pound should be sufficient for about 200 lb. of cotton. The writer has made many experiments with permanganate side by side with bleaching powder, sodium hypochlorite and hypochlorous acid, and is of opinion that none of the latter give a white which approaches that produced by permanganates. Potassium permanganate contains 25.3 per cent of oxygen available for bleaching, all of which can be utilized if a suitable process is employed. The usual method is to soak the boiled cotton in a solution containing about the same quantity of sulphuric acid as permanganate. The liberation of oxygen proceeds in accordance with the equation —

$$2KMnO_4 + 3H_2SO_4 = 2MnSO_4 + K_2SO_4 + 3H_2O + 5O.$$

Theoretically, the quantity of sulphuric acid represented by the equation should be sufficient to ensure the liberation of all the available oxygen. In practice, however, it is not, and the fibres become coated with the mixed brown peroxide and sesquioxide of manganese. These cannot be dissolved till they are reduced to manganous oxide. Hence a reducing bath of sulphurous acid or sodium bisulphite is necessary, which converts the oxides into soluble manganese sulphate.

This treatment entails the loss of part of the available oxygen, and increases correspondingly the expense of the process. The available oxygen contained in the precipitated oxides may be utilised by using a bath of weak acidified hydrogen peroxide instead of sulphurous acid, when mutual decomposition takes place resulting in the liberation of nascent oxygen; *e. g.*—

$$MnO_2 + H_2O = Mno + H_2O + 2O$$

the manganous oxide dissolving in the acid of the bath. But a cheaper and equally satisfactory method is to use a stronger solution of sulphuric acid in the first operation. If acid of about 5 deg. Tw. strength is used, there is no precipitation of oxides of manganese of the fabrics. This means that the reaction proceeds in accordance with the equation given, and that the whole of the available oxygen is utilized for bleaching. Further, since no oxides are deposited, a bath of sulphurous acid is no longer required. The sulphuric acid containing the dissolved sulphates of potassium, and manganese can be used several times, and this helps to reduce the cost of the process.

The following method will give good results. The boiled cotton is wetted down in the sulphuric acid solution of about 5 deg. Tw. strength and sufficient acid added to completely cover it. About 0.2 to 0.5 per cent on the weight of the goods of potassium permanganate is dissolved in water and added to the bath in portions. The liquor is either circulated or the goods worked in the bath to ensure even distribution of the bleaching agent. The bleaching action is complete in about two hours. The goods are then thoroughly washed with water, treated with a very dilute solution of sodium carbonate and finally washed off with water and dried.

Many bleachers think that permanganate is liable to cause over bleaching. This is, however, not the case if only small quantities are used.

The persulphates are still more powerful, as oxidising agents, than the permanganates, and their action is readily controlled. Potassium persulphate is practically stable in cold aqueous solutions, but above 30 deg. Cen. it evolves nascent oxygen very gradually.

$$2K_2S_2O_8 + 2H_2O = 4KHSO_4 + 2O$$

The rate of decomposition increases gradually with the temperature up to 100 deg. Cen. It is accelerated also by the addition of acid or an oxygen carrier. In order to get any marked bleaching effect with cotton, the operation must be conducted at a comparatively high temperature. This appears to favour the production of oxycellulose, for most of the chemists who have studied the process agree that tendering is common. But persulphates can be used in another way. Solutions of sodium chloride when treated with persulphates are decomposed gradually, even at ordinary temperatures, with the evolution of chlorine in accordance with the equation—

$$K_2S_2O_8 + 2NaCl = K_2SO_4 = K_2HO_4 + Cl_2$$

If the solution is warmed the liberation of chlorine becomes much more rapid. The rate of decomposition can in fact be controlled at will. This suggests another way in which persulphates may be employed as bleaching agents which has been the subject of experimental investigation in the writer's laboratory.—Textile Recorder.

JAP PAPER AND PULP IMPORTS IN JUNE

The following is the list of paper imports during the month of June into Japan: (one kin = 1.33 lbs. one yen = 50c.)

	Kin	Yen
England	1.720.024	412.328
U. S. A.	524.293	140.345
Sweden	2.406.900	421.862
Germany	2.676.417	533.344
Norway	636.500	112.192
Canada	666.300	105,470
Belgium	..7.200	19.171
Holland	35.440	8.573
Denmark	8.100	1,786
Italy	38.900	10.525
France	6,191	13.030
China	32.460	13.445
Spain	100	42
Russia	228.400	34.049
Switzerland	100	200
Others	7.500	4.064
Total	9.062.825	1.830.427

The following is the list of chemical pulp imports during June; no imports of mechanical pulp made in June:

	Kin	Yen
U. S. A.	175.800	22.723
Sweden	261,900	27.854
Germany	436.500	48.400
Norway	294.400	34.336
Canada	4.270.100	422.675
Total	5.338.700	555.988

There is only one real failure in life, and that is, not to be true to the best one knows. — Canon Farrar.

The Proper Use of Cost Data by Trade Associations

What is a Trade Association?

The A. T. A. E. says it is:

"An organization of producers or distributors of a commodity or service upon a mutual basis for the purpose of promoting the business of their branch of industry and improving their service to the public through the compilation and distribution of information, the establishment of trade standards and the co-operative handling of problems common to the production or distribution of the commodity or service with which they are concerned."

There are various types of industrial services which are *not* trade associations.

Some of these do excellent and entirely legitimate work—others are of different character.

The outstanding accomplishments of American trade associations are in two fields:

1. The development of standards of commodities and practices.
2. The compilation of facts—statistics.

We get the benefit of trade standardization daily from the bed we sleep in—if we are not too tall—the paper we read and the breakfast we eat in the morning and our means of travel to our daily task—afoot or awheel—to the coffin we are buried in and the insurance policy left to our dependents. Human beings cannot live together without standardization.

Statistics are as necessary to the navigator on the sea of business as are compass, sextant and barometer to the mariner on the high seas.

Only upon a basis of facts is it possible for the public to be served in the manner it demands. Facts are sometimes disconcerting, but never so damaging as the gossip which circulates when facts are not available. Business done by daylight is permanently more successful than that done in darkness, and while the public may reap a temporary advantage from blind competition of either buyers or sellers, the public in the long run pays the bills for all economic losses.

"Big business" usually has adequate means of its own for securing necessary data. It is only through trade associations that the smaller operators are able to be informed and meet conditions that arise from day to day.

It is illegal for competitors by agreement to:

Fix prices.
Limit output.
Divide territory.

But commerce and industry assert that they have the inherent right to collect and distribute through their trade organizations statistics as to volume of production, shipments, stocks, orders, costs, wage rates, market conditions as to their own and competing commodities, all impartially compiled by a trained association executive and supplied without coloring by him to all who have a legitimate interest in the matters dealt with.

Trade associations have opportunity for great service to their members and the public through the study of all items of cost and the setting up of *honest cost standards.*

Unfortunately, there have been too many cases where so-called uniform cost systems introduced by so-called cost accountants have not been used for the honest determination of costs for the purpose of reducing costs and effecting economies in operation, but for the purpose of *fixing* or *raising* selling prices. Aside from the moral turpitude involved, such undertakings do not find favor with the Department of Justice or the United States Supreme Court.

Many business men, used to individual freedom, have failed utterly to realize the difference between what each *may do for himself* and what he *may not do in agreement with his fellows.*

What is legitimate in one case may be criminal conspiracy in the other.

Trade association executives in every capacity—managers, secretaries, cost accountants, legal advisers or what not—are duty-bound to protect their organizations from foolish ventures of this sort.

The handling of cost data by trade associations should be on the same basis as other statistics:

No guesswork.
No advice as to selling prices or profit margins.
No agreements as to fixed charges.
No averaging or estimates to establish mythical "costs" which in reality conceal a profit.

Trade association service in cost determination should be of as high-grade as can be obtained from well-known firms of public accountants and equally impartial. Such service is of great value to an industry in:

Exposing incorrect methods.
Revealing uneconomic processes.
Checking wastes.
Indicating opportunities for reducing costs.

Direct service of this sort to an industry is indirect but nevertheless tangible service to the public which buys the product of the industry.

Such service is most effective when operating costs are compared on a standard basis.

Every business man has the right to know all the essential facts in connection with the production and distribution of his product but he has neither moral nor legal right through agreement with his competitor to endeavor to bring about an artificial condition beneficial to himself and hurtful to the public.

The cost accountant has a great function to perform and great opportunity for service in the ascertainment of the economic facts essential to sound business and industry. His national association is to be congratulated upon its leadership in such development.

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* Abstracts of address given by R. S. Kellogg at meeting of National Association of Cost Accountants, Buffalo, N. Y., September, 13, 1923, by Courtesy, News Print and Service Bureau

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ENGLISH AS SHE'S SPOKE

A woman from Neosho Falls dropped in John McCallon's emporium yesterday and inquired:

"Is this a second-hand store?"

"Yessum," said John.

"Well," said the lady, "I want one for my watch."

TECHNICAL SECTION

REVIEW OF RECENT LITERATURE

TESTING & ANALYSIS

A-1 Sources of Error in the Determination of the Lignin Content of Wood by the Method of Schmidt and Graumann. ASTRID C. v. EULER. **Svensk. Kem. Tids** 35, 100-7 (1923). The determinations of Schmidt and Graumann are not reliable because they did not take into account the action of chlorine dioxide upon protein, the solubility of about 10% of the carbohydrate in their procedure and the partial solubility of lignin in dilute sulphite solutions. It is shown that lignin may be extracted by a 2% sodium sulphite solution at the temperature of the water bath, the yield after thirteen digestions and subsequent washings being 23.4%. Pine and spruce woods were studied.—C.J.W.

A-15 Behavior of Celluloses Towards Iodine and Dyestuffs. J. HUEBNER and J. N. SINHA. **J. Soc. Chem. Ind.** 42, 255-260T (June 15, 1923). Absorption of iodine (before and after-treatment with 17.5% caustic soda), of methylene blue and of metanil yellow by bleached cotton waste, cotton halfstuff, bleached linen halfstuff, unbleached, bleached and bleached and purified sulphite, unbleached and bleached pine soda pulp, groundwood, bleached esparto, bleached straw, and unbleached jute are tabulated. In practically every case iodine gave rise to the formation of traces of iodoform. Addition of iodine and caustic soda followed by distillation gave iodoform with popular cellulose, alphabeta — and gamma-celluloses from poplar, viscose from wood pulp, cuprammonia silk from cotton, degummed natural silk, scoured wool, sago starch, cane sugar, india-rubber, glycerol, furfural, and French resin. On distilling cellulose in aqueous alkaline solution, the distillate yielded iodoform immediately on treatment with iodine and caustic soda at ordinary temperature, and the still liquor and the cellulose residue on addition of iodine and caustic soda and distilling also yielded iodoform. The iodine may assist in breaking down the cellulose complex, but it seems more likely that the caustic soda is the main factor.-A.P.-C.

A-15 Contribution to the **Knowledge of Lignin.** EMIL HEUSER and ARNE WINSVOLD. **Cellulosechemie** 4, 49-58 (June 24, 1923); Ber. 56B, 902-909 (1923). Lignin, as prepared according to the method of Willstatter and Zechmeister from spruce wood, was subjected to fusions with potassium hydroxide under different conditions and the following products were observed: lignin acid, oxalic acid, protocatechuic acid, and pyrocatechol. In the presence of air, with the temperature of the fusions between 240 and 280° C., larger amounts of oxalic acid were obtained than in the presence of hydrogen and nitrogen, when oxidation was eliminated and the formation of oxalic acid largely prevented. In the latter case the yield in pyrocatechol was increased. In the presence of iron all the protocatechuic acid was transformed into pyrocatechol. Ligninsulphonic acid, obtained from waste sulphite liquor, behaved similarly when fused with alkali, both in the presence of air and of hydrogen. The not inconsiderable yield in aromatic substances, about 28% based on lignin used, speaks for the aromatic nature of the substance. The skeleton appears to be a benzene ring with oxidizable side chains and some substituted hydroxyl radicals. Cellulose in an alkali fusion yields practically no aromatic substances.-J.L.P.

A-15 E-0 Classifying Sulphite Cellulose. .**Producer. Svensk Pappers Tid.** 26, 226-227 (1923); **Chem. Abstr.** 17, 2781. It is suggested that sulphite cellulose be classified in some other way than by the lignin content. On the ground of quality the terms normal and unbleachable, normal and bleachable and normal and easily bleached are suggested.-C.J.W.

WOOD PREPARATION

C-1 E-1 Sulphite Mill Control. . .O. L. BERGER **Paper Mill** 47, No. 222, 54, 56 (June 2, 1923); **Paper Trade J.** 76, No. 23, 36, 38 (June 7, 1923); **Paper Ind.** 5, 493-494 (June 1923). Brief outline of the control of wood received, barking, chipping, acid making, cooking, reclaiming acid and bleaching.-A.P.-C.

MECHANICAL PULP PROCESS

D-3 E-3 F-3 Yields of Pulp and Groundwood. B. POSSANNER. **Zellstoff U. Papier** 3, 131-134 (June 1923). The article is devoted almost entirely to the chemistry of the sulphite process. In the soda process, the yield in straw pulp is about 40%, while with wood pulp it is only 35%. The sulphate process gives a yield of about 40% and the sulphite process approximately 44%, based on the wood used. 100 kg. of sulphite pulp require 10-15 kg. sulphur, 15-20 kg. limestone, 100-140 kg. coal of which 30-40 kg. are for power, 40-60 for cooking, and 20-40 for drying the pulp. The normal bleach loss is given as 8 to 10% of the unbleached pulp. The data on groundwood is quoted largely from Kirchner.-J.L.P.

SULPHITE PROCESS

E-1 Control in a Mitscherlich Sulphite Mill. Vance P. EDWARDES. **Paper Mill** 47, No. 21, 16, 40 (May 26, 1923); **Paper Trade J.** 76, No. 22, 47-48 (May 31, 1923); **Paper Ind.** 5, 498-499 (June 1923); **Paper** 32, No. 7, 10, 16 (June 6, 1923). Outline of proper control of acid making, cooking and grading of pulp.-A.P.-C.

E-2 Detection of Sulphite Cellulose Liquor. G. GRASSER. **Zettsch. Led. Gerb. Chem.** 1, 377 (1922). Purified sulphite cellulose extract forms an excellent pretanning material, a phlobaphene solubilizing agent for chestnut and quebracho and a product for strengthening vegetable extracts, thereby hastening the tannage of sole leather. It is inferior to Ordoval as a weighting material because of its grain hardening action and its hygroscopic nature. Many quebrach, chestnut and oak extracts, of which the author had positive knowledge as containing no sulphite cellulose extract, gave the Procter-Hirst reaction. Investigation showed the reaction was due to the presence of woody material in solution or to humic acid. It is recommended to add freshly prepared concentrated aniline hydrochloride in excess to the liquor under investigation, when a precipitate will occur if sulphite cellulose or humic acid is present. This precipitate at ordinary temperature is light brown but on heating collects as a dark brown waxy precipitate which floats on the surface. On cooling it becomes brittle and melts on reheating. All other precipitates with acids were finely powdered reddish brown phlobaphene formation. The author concludes that the Procter-Hirst reaction determines not only the presence of sulphite cellulose in extracts but also woody material in solution, woody decomposition products and humic acid. C.J.W.

E-2 Determination of Calcium Sulphate in Waste Sulphite Liquor. A. SANDER. **Chem. .TG.** 47, 336-337 (1923); **Papierfabr.** 21, 283-284 (June 10, 1923). The methods given in the literature for the determination of calcium sulphate in waste sulphite liquor are not entirely free from errors in that difficulty is experienced with the organic matter present. Sander treats a sample of the liquor with concentrated hydrochloric acid in an atmosphere of hydrogen or carbon dioxide. Following the decomposition of the organic acids and removal of most of the sulphur dioxide, the mixture is heated on a water-bath to which sodium chloride has been added. The lignin precipitate is removed by filtration and the sulphates in the filtrate precipitated with hot barium chloride solution. Some organic matter comes down with the barium sulphate and allowance is made for the subsequent reduction to sulphide on ignition by adding a little sulphuric acid and heating again. In several tests the residues were white. Calcium sulphate was more soluble in waste sulphite liquor than in water. (See also **Paper** 32, No. 12, 5-6,17 (July 11, 1923).-J.L.P.

E-2 Possibility of Obtaining More Fractions in Continuous Distillation. E. OMEN. **Svensk Pappers Tid.** 26, 223-238-41 (1923); **Chem. Abstr.** 17, 2781. Swedish and German apparatus for continuous fractional distillation of sulphite liquor are compared. The possibility of getting more than two fractions and the limits within which they may be obtained are discussed. Three cuts, five graphs and seven tables show the arrangement of shelves, the per cent of methyl alcohol on each shelf with reference to the shelf below and the minimum mthyl alcohol content for varying per cents of methyl alcohol in the total distillate.-C.J.W.

E-2 Evaporation of Waste Liquor in Cellulose Plants. E. WIRTH. **Svensk Pappers Tid.** 26, 10-11 (1923). **Chem. Abstr.** 17, 2781. The advantages and disadvantages of horizontal and of vertical heating surfaces are compared with special reference to the temperature.-C.J.W.

E-2 Evaporation of Waste Liquors in Cellulose Plants. K. L. THUNHOLM. **Svensk. Pappers Tid.** 25, 345-346 (1922). **Chem. Abstr.** 17, 2781. A résumé of these phases of evaporation of waste liquor: the formation of scum, use of horizontal heating surfaces, effiency of the scrapers, accessibility of the apparatus, steam speed and compression. The exact rise of the boiling point when evaporating waste liquors depends upon whether sulphate liquor, neutralized sulphite liquor or non-neutralized sulphite liquor is used.-C.J.W.

E-2 Apparatus for Evaporating Sulphite Liquor. H. THORBJORNSON. **Svensk. Pappers Tid.** 25, 368-370 (1922).. **Chem. Abstr.** 17, 2782. A new apparatus for continuous evaporation of sulphite liquor is described. It has no moveable parts. Data for three trials are given leading to transmission coefficients of 4,650, 4,880 and 5,080 respectively. All parts of the apparatus in contact with steam must be of copper, acidproof metal or cast iron. Steel tubes are of short life for continuous evaporation. Other parts may be of sheet iron, lined with acid proof masonary.-C.J.W.

E-2 Organic Compounds from Sulphite Liquors. Aktieselskapet Sulfitsprit. Norw. pat. 34,835, May 1, 1922. **Chem. Abstr.** 17, 2504. For the decomposition of the ligninsulphonic acids and the consequent precipitation of the lignites, a certain concentration of sulphuric acid in the liquor is required. This is attained by conducting the liquor together with gas from the wasting furnaces into anauto the liquor is required roasting furnaces into an auto-clave supplied with an apparatus for spark discharging. Sulphur dioxide is oxidized and sulphur trioxide absorbed by the liquor. The gas is then blown into the absorption towers.-C.J.W.

E-2 Sulphite Waste Liquor. Aktieselskapet Sulfitkul. Norw. pat 34,954, May 22, 1922. **Chem. Abstr.** 17, 2504. The liquor is heated under high pressure in the usual way and neutralized with limestone. Then lime milk is added until alkaline reaction, whereby a precipitation of lignites is obtained.-C.J.W. .

E-2 M-8 Pump for Fibrous Liquids. P. C. SSHAANING. Norw. pat. 34,416. Mar. 20, 1921. **Chem. Abstr.** 17, 2375. A pump for cellulose liquor, etc. Compressed air is added in the pipe between the pump and the outlet.-C.J.W.

E-4 Graphical Methods for the Control of Combustion Gases from Sulphur and Pyrites Burners. RUDOLF SIEBER. **Zellstoff U. Papier** 3, 97-103 (May 1923). Graphical methods are described for the valuation of pyrites and sulphur burner combustion gases, for a more exact estimation of the gas, composition, and for a rapid determination of the sulphur lost in the burning process. — J.L.P.

F-5 Production of Pulp from Peat. PLAUSON'S FORSCHUNGSINSTITUT. Ger. pat., 376,760. **Papierfabr.** 21, 196 (June 17, 1923). The peat is subjected to a cooking treatment under pressure in the presence of calcium hydroxide and an alkali sulphate, sulphite, or carbonate, or mixtures of these.-J.L.P.

E-5 The Decker Cooking Process. Paper Trade J. 76, No. 25, 49 (June 21, 1923). The Decker process consists in using a freshly charged digester as reclaiming tank for relief gas and relief liquor. The advantages are reduced steam consumption (about 4,400 lb. required per ton of pulp) and wood consumption (about 0.3 cord less per ton of pulp) total absence of uncooked chips, and uniformity in the quality of the pulp. It has been in commercial use for nearly two years. (This process is protected by Can. pat. 229,288, March 6, 1923.)-A.P.-C.

E-5 Investigation of Acidproof Metal for Digesters. E. HAKANSON. **Svensk Pappers Tid.** 26, 115-118 (1923): **Chem. Abstr.** 17, 2782. The properties of acidproof metal which establish its suitability for digester parts have been investigated between 18 and 325°: 4 diagrams give the results.-C.J.W.

E-0 Problems of Sulphite Pulp Manufacture. ARTHUR S. M. KLEIN. **Pulp & Paper** 21, 619-620 (June 24, 1923). General discussion of some fundamental problems: cellulose chemistry, steaming before digestion, function of reclaimed acid in cooking, use of sulphite waste liquor.-A.P.-C.

ALKALINE PROCESSES

F-2 R-6 Chlorine. Chlorine Hydrate and Waste Waters. RAYMOND FOURNIER. **Papeterie** 45, 374 378, 418-425 (Apr. 25, May 10, 1923). The DeVains

(Continued on page 942)

INTERNATIONAL PAPER MONTHLY

There has just come to the Editor's desk a copy of the first issue of "The International Paper Monthly," which is intended, to quote from a Foreword by President Philip T. Dodge, "to make us better acquainted, quicken our realization of all the other fellow has to do, keep our aims high and unify our aspirations and our efforts." The Editor feels honored to find himself acquainted with so many of those mentioned in the pages, from President Dodge to the printer of the magazine and many mill workers. In the baby contest, we find the happy faces of children of some of our friends, and we find reference to a number of familiar places. The news letters are unusually complete and interesting. There is a fine article on the building of the Sherman Island hydro-electric plant, and a brief history of the International Paper Company's beginnings, as well as a very fine general letter by President Dodge, and an excellent appreciation of the late George F. Underwood, recently chairman of the Wood Committee of the International Paper Company, and a member of the Board of Directors since the organization of the Company—a record of twenty-five years of devoted and helpful service, both to the Company and his fellow employees. A few items from the first number of this International Paper Monthly are reproduced herewith.

How the International Paper Company Began

By W. E. HASKELL

The merger of nineteen paper and pulp companies in New York and New England, which created the International Paper Company, took place in January, 1898.

The expiration of the Voelter patents for grinding wood into mechanical pulp in 1884, marked the beginning of the wood-paper industry's great expansion, which, ten years later, had increased production nearly 400 per cent. above the figures of 1880.

The removal of patent restrictions from the new process of grinding wood into pulp opened wide the door of the paper industry to ambition and capital. Available water powers on the Black and Hudson rivers in New York, on the Connecticut in Vermont and New Hampshire, and on the Androscoggin, Kennebec, and Penobscot, in Maine, were quickly developed, wood grinders installed, and paper mills built. The manufacturer of paper from wood was growing to meet and create new conditions.

It was about the middle of the tenth decade of the last century, in the midst of the industry's growth, that William A. Russell conceived the idea of a corporate combination of the leading paper mills of New York and New England and the foundation of a giant paper company which would be the standard bearer of the industry by reason of its large production and its incomparable water power and woodland assets.

Mr. Russell, who was the principal owner of the Fall Mountain and Winnipiseogee Paper Companies, operating mills at Bellow Falls, Vermont, and Franklin, New Hampshire, early secured the co-operation of Hugh J. Chisholm, then president of the Otis Falls Pulp Company, which owned mills on the Androscoggin River in Maine.

It was not an easy task. The merits of the plan had to be demonstrated and proved to the directors of nineteen companies, whose properties were scattered on the different water powers of New York and New England, from the Niagara River to the Penobscot. It took time to convince all the interests involved, to modify and readjust the original plan to the varying and diverse conditions of the different companies, to unify conflicting patent rights, and to secure the committing signatures on the dotted lines of an agreement. But after an immense amount of work, with alternating encouragement and discouragement, final agreement among the participating companies was secured and the International Paper Company was incorporated on January 31, 1898, under the laws of the State of New York. The companies whose properties were taken over by the new corporation were:

Glens Falls Paper Mill Company.
Hudson River Pulp and Paper Company.
Otis Falls Pulp Company.
Glen Manufacturing Company.
Niagara Falls Paper Company.
Rumford Falls Paper Company.
Falmouth Paper Company.
Winnipiseogee Paper Company.
Umbagog Pulp Company.
Russell Paper Company.
Haverhill Paper Company.
Herkimer Paper Company.
Ontario Paper Company.
St. Maurice Lumber Company.
Turners Falls Paper Company.
Montague Paper Company.

Mr. William A. Russell was elected president of the company on February 4, 1898, but was forced by ill-health to retire on July 27 of the same year.

Mr. Hugh J. Chisholm, the first vice-president, filled the executive chair from that date until elected president in October and held the office until October 30, 1907, when he resigned and accepted the chairmanship of the Board of Directors.

From this date until January 27, 1913, the executive chair was filled by Mr. A. N. Burbank, who had been a business associate of Mr. W. A. Russell, and his coadjuster in the formation of the company. Up to this time the course of the company had not been along a path of roses. It was not a simple task to harmonize all of the different interests and perfect an efficient organization. The products of the different mills had to be adjusted to advantageous market conditions. The principal consumers of newsprint were united under an uncompromising and relentless leadership to force prices to a ruinous level. Influenced by the press of the country, Congress removed the compensating protection which the tariff afforded the industry. At about the same time the Canadian supply of pulpwood was cut off by arbitary provincial action and the complexities of the raw material problem were multiplied.

Earnings were dwindling to a danger point and the future prospects were far from bright.

The general conditions of the company, the hostile attitude of the principal customers, and the universal economic situation, all demanded the discovery of an executive who could bring to the office constructive ability, organizing power, and a broad knowledge of men and conditions, to succeed Mr. Burbank, who wished to retire after his long term of service.

This man was found in Philip T. Dodge, already a director of the company, who had achieved a remarkable success in the development and management of the Mergenthaler Linotype Company, and whose activities had brought him into intimate personal touch with the publishers of the country who consumed the bulk of the company's production.

Mr. Dodge was elected president of the International Paper Company on January 27, 1913, and still holds that office.

From the time of his election to the present day, a period including the duration of the Great War with all its attendant disturbances and dislocations of normal economic and industrial conditions, the paper industry has had to face problems, interferences from the Government, crucial readjustments and sudden adaptations to new situations never dreamed of by its founders and never paralleled in any other manufacturing activity.

The present condition of the company, with its financial foundations firmly established, with its many properties reconditioned and developed to strong efficiency, with an organization united and loyal and with a record of uninterrupted service to its clients in spite of the tumultuous times, is the best evidence of the character of the incumbent administration.

YES, WE HAVE NO NEWSPRINT

A song that will be popular with the salesmen of some of the smaller newsprint companies if Canada puts an embargo on pulpwood.

Tune: "Yes, We have no Bananas.

Yes, we have no newsprint,
We have no newsprint to-day.
We have, sulphite and sulphur,
Hard coal and clay,
All sorts of machinery and say,

We have some nice strong wrapper,
Writing paper that's dapper,
But yes, we have no newsprint,
We have no newsprint, to-day!

Harding (to new office boy)—Take these papers down to the cook.

New Office Boy (two days later returned the papers to Harding) "I looked all over the mill, but couldn't find the kitchen."

FALL BRISKNESS EXPECTED EARLY

New York, Sept. 17.—"By the time of the annual Fall Business Conference of the American Paper and Pulp Association is held in Chicago, the week of October 8, the autumn revival of business in the paper industry will be well under way," says the Paper ad Pulp Industry, in the monthly bulletin to its members, published by the American Paper and Pulp Association.

"In common with other basic industries, a revival of demand is characterizing the paper market. An increasing volume of inquiries, indicating a quickened fall demand for paper of all grades, together with the known depletion of stocks in the hands of merchants and consumers seems to offer every prospect of stimulated production, as soon as the period of summer dullness has passed.

The resumption of activity appears to be a month in advance of the usual reaction from the summer dullness. The falling off of business during July and August bids fair to be more than compensated by the receipt of orders which are usually not placed until late in September. This would bring the peak of production in October, a few weeks earlier than usual. Operations in July compared with June were off about 14 per cent, which was not much more than the seasonal variation always expected.

All in all, the American paper industry is prepared to enter the fall period of active business in a healthy condition."

IMPROVING PAPER STATISTCS

The American Paper and Pulp Association will shortly issue its August report on the pulp and paper industry. The machinery for the collection, tabulation and dissemination of these statistics to those interested has now been perfected and the main consideration henceforth will be to issue the complete reports as promptly as possible. This point, however, is intimately connected with the promptness of individual manufacturers in sending in their monthly reports.

It is gratifying to note that the number of mills which are sending in their statistics is even thus early in this new service more than sufficient to give the industry a report upon volume of production which gives definite indication of trends. The tonnage reported in the three months since the Association took over the task of compiling statistics of the industry is considerably larger in proportion to the total production than any other trade associations in basic industries are able to secure. It is usually considered that 50 percent of the total production in a given industry is sufficient to definitely indicate trends. The American Paper and Pulp Association statistics, however, in no branch of the industry are less than 45 percent, and in some branches are as high as 95 percent of the total production. While many mills are still not reporting, as a rule their production does not represent large tonnage. It is desirable to have figures from as many mills as possible and every effort is being made to secure production figures from those companies that are not as yet co-operating in the compilation of these statistics.

Regarding the value of such statistics to the paper industry, there can be no doubt of the fact that the morale of the entire industry has been strengthened by having full information as to what is taking place in the industry. It would be decidedly harmful to revert to the policy of working in the dark, with an eye only on the status of one's individual plant. No intelligent individual action can be taken in vital matters without accurate and dependable data as to the status of the group.

It is recognized by paper manufacturers and the officers of the American Paper and Pulp Association that the form of the present summaries, unchanged as they are from the form used by the Federal Trade Commission, is not that which best serves the individual manufacturer. Already, however, some changes have been made from the form which of necessity the Association was forced to follow in its first two or three summaries, and further changes are in contemplation. Most important of these changes are the tabulation of subdivisions of the various groups, in order to make the figures of the greatest value to the individual manufacturer.

The largest branch of the industry from a tonnage standpoint is that of the general group of board manufacturers which will be among the first to have subdivided group statistics. To a board manufacturer there are clearly defined grades different from other board grades in the raw materials consumed. It is of great value to them to know the production of the entire group of boards by groups. Other groups require the same essential detailed information. The Association has been studying this question closely and the main purpose is to make the report in its final form one which will be of real interest to the individual manufacturer, giving such detailed information as will enable him to recognize the trend of the operations not only in the whole industry, but in his particular branch of the industry.

Sheer honesty of thought, character and conduct is one of the noblest traits in a knightly life.

process is being further studied with a view to decreasing the caustic soda consumption without increasing the chlorine consumption and eliminating the discharge of alkaline waste liquors. Decrease in caustic soda consumption can be obtained by partial recovery, so that the amount actually used is equivalent to the chlorine used. By mixing waste bleach and alkaline liquors, they neutralize each other and the mixture is practically neutral. These waste liquors are discussed from the standpoint of stream pollution.-A.-P.-C.

F-5 Discharging Liquor from Digesters. W. RAITT. Eng. pat. 195,005. A common system of pipes having branch connections to each digester and to liquor storage tanks is provided. Each pipe system has its valves and perforated screens. The screens are fixed inside each digester in such a position as will permit the discharge under steam pressure of the supernatant spent liquor lying above the pulp mass at a point above the pulp mass.-A.P.-C.

F-5 Chemistry of theAlkaline Wood Pulp Process. I. Apsen, Loblolly Pine and Jack Pine by the Soda Process. S. D. WELLS, R. H. GRABOW, J. A. STAIDL and MARK W. BRAY. **Paper Trade J.** 76, No. 24, 49-55 (June 14, 1923). A large series of cooks is described in detail, with analyses of impregnating, cooking and black liquors, and analyses and strength tests of the pulps at various stages of the process. All cooks were made with preliminary impregnation. Approximately 90% of the cooking occurs in the first two hours. At the beginning the cellulose is removed as fast as the lignin; but in the middle portion of the cook the lignin removal is more rapid. The wood constituents forming acetic, formic and other volatile acids are easily hydrolyzed most of them being removed before the digester has reached full pressure. The point of maximum bleachability may be passed in cooking, and further cooking increases bleach requirements. Extraction and removal of alkali soluble material in one case greatly increased ease of bleaching. During the latter part of the cook volatile methoxyl compounds are converted into non-volatile compounds.-A.P.-C.

F-5 Influence of Sulphur in the Cooking of Jack Pine by the Sulphate Process. SIDNEY D. WELLS. **Pulp & Paper** 21, 623-626 (June 21, 1923); **Paper Ind.** 5, 786-793 (Aug. 1923). Experiments and results described in detail show that the general effect of sulphur in the cooking of sulphate pulps is to speed up the cooking reaction, so that under similar conditions the same degree of digestion is obtained at least one hour earlier in the case of somewhat under-cooked pulps and in the case of well-cooked pulps the difference is more marked. There are marked increases in tearing resistance (almost 20%), folding resistance (almost 500%), bursting strength and tensile strength. Where equal yields of pulp are obtained, the use of sulphur reduces bleach consumption 50%. Use of sulphur reduces the loss of cellulose in cooking about 50%. There is otherwise little difference in the chemical composition of the pulps.-A.P.-C.

F-5 Paper Pulp Manufacture. A. OLIVER. Eng. pat. 193,965. According to this process the cellulose materials to be transformed into pulps maintain a continuous flow during the whole treatment. The exhausted soda lyes are continuously renewed and regenerated. Variable and adjustable resistances in the apparatus permit uniform treatment of pulp at all stages from introduction to removal as pulp.-A.P.-C.

F-5 The Manufacture of Fibrous-Containing Substances. JOHN BILLWILLER and J. BILLWILLER. Ger. pat. 376,488. **Papierfabr.** 21, 286-287, (June 10, 1923). The raw material is treated with solutions of ammonium hydroxide or other substances under a high pressure and temperature (up to 280°C.). A rapid separation of the fibers is claimed.-J.L.P.

F-5 Paper Material from Bamboo. K. OKOCHI. Jap. pat. 41,458. Jan. 24, 1922. **Chem. Abstr.** 17, 2645. In boiling bamboo with alkali, alcoholic extract of oak is added to prevent decomposition of the fiber itself and to decrease the loss of fiber. Bamboo pieces (3.75 kg.) are boiled with 225 g. of sodium hydroxide, 2.16 1. of water and 0.27 1. of the alcoholic extract, washed with water and bleached. The alcoholic extract is prepared by treating 450 g. of sliced oak with 80 g. of 85-90% alcohol at 50 . — C.J.W.

F-5 G-5 Purifying Soda Cellulose. — A New Process. F. KRENN. **Wochbl. Papierfabr.** 54 698-699 (1923); **Paper Ind.** 5, 479-480 (June 1923). The cooks are timed so that after one cook has been blown into the diffuser the next cook is ready to relieve, and in releasing the pressure from 9 to 4 atmospheres the released steam is led into the diffuser to force the black liquor out of the pulp. The latter is broken up by means of water under pressure which is forced through perforated pipes.-A.P.-C.

F-5 The Rinman System for Working Cellulose and Chemical Products. E. L. RINMAN. **Svensk Pappers Tid.** 26, 158-162 (1923). **Chem. Abstr.** 17, 2781. The Rinman system for sulphate pulp differs from others in the method of digesting and in the working up of the waste liquors. The use of soda liquor alone instead of soda liquor and sodium sulphide obviates foul odors. The chips are treated at 90 to 100° with the dilute black liquor which later will be used in the digester and then with the white liquor. During digesting the temperature is raised only fast enough to dissolve the incrustations. Longer time and lower temperatures are used than normally. Waste liquors are of two kinds, black liquor and a mixture of black liquor, white liquor and lime called lime liquor. From 7,000 1. of the former 4,800 kg. of water are evaporated leaving 2,800 kg. of 32° Be. black liquor and from 5,800 kg. of the latter 1860 kg. of water are evaporated, leaving 4,000 kg. of thick liquor for dry distillation. Each ton of raw pulp yields 25 to 30 kg. of methyl alcohol, 16 to 20 kg. of acetone, 16 to 20 kg. menthyl ethyl ketone, 18 kg. of ketone oils and 50 kg. of heavy oils. This method gives the same yield of cellulose as the usual sulphate method and 50% more side products with only a slightly increased cost of production.-C.J.W.

E-6. Water for Sulphite Mills. A.KLEIN. **Zellstoff U. Papier** 3, 103-104 (May 1923). A brief article dealing with the impurities in raw water and their removal. In a mill making 30 to 35 kg. of bleached sulphite pulp per minute about 12,000 1. of water were needed. The distribution of this water in the mill was as follows: (1) 250 1. in the power plant, (2) 650 1. in the acid plant, including that used for cooling the gases, (3) 300 1. in the cooking process, (4) 10,000 1. in the screening and washing operations, and (5) 300 1. in the bleaching baths and wet machines.-J.L.P.

G-6 Washing Sulphate Pulp in Diffusers. T. SAMSON. **Svensks. Pappers Tid.** 26, 60 (1923). **Chem. Abstr.** 17, 2782. Diagrams are given for washing sulphate pulp in diffusers set up in circles of 5, 7 to 9 circular diffusers so that each gets the same amount of washing.-C.J.W.

PULP AND PAPER NEWS

At the annual meeting of the Maritime Board of Trade held last week at Halifax, N.S., a resolution was passed calling upon the provincial governments to appoint chief fire rangers who have a technical knowledge of fire prevention and control, and to pursue a more aggressive policy of reforestation and preservation of forest until they have attained marketable growth.

Mr. A. G. Boland, timber cruiser for J. R. Booth, Ltd., Ottawa, for the last 25 years, died on September 12 in Ottawa.

The lumber trade in the East has declined, owing in part to smaller American orders. The demand for both hardwoods and softwoods has been largely filled for the time being, and with the lumber going into consumption trade has slackened. Prices of hardwoods have fallen. Very little is being done in the way of export to the U. K.

Mr. Frank Hawkins, who recently resigned as secretary of the Canadian Lumbermen's Association, and Mrs. Hawkins are now on an extended trip to Great Britain.

The Ontario Lands and Forests Department have decided to continue fire-ranger patrol in the Northern Ontario timber districts until every vestige of fire hazard is passed. There are at present well over a thousand fire-rangers patrolling the Ontario woods and this is the greatest number of men engaged in the history of the Department. Neither, it is stated, will individual districts be permitted to bring about of their own accord the withdrawal of their fire protective forces. Besides the policy of extended patrol service, the Department is expanding as quickly as possible its lookout tower facilities from which a watchman can detect a fire a score of miles away. A new type of water-throwing gasoline engine is fast being distributed throughout various centres.

A large rotary printing press for producing counter check books is being installed by McCaskey Systems, Limited, Galt, Ont. This machine will increase the concern's capacity about twenty-five per cent. The press is the most up-to-date in the sales book field and will produce from eight to ten thousand complete books per day, either in folded or flat style. The company have been adding to their capacity at the rate of one large press per year for the last three years and are showing remarkable growth in the sales book business.

J. T. Shirreff, Vice-President and Assistant Manager of the E. B. Eddy Company, Limited, Hull, P.Q., received the congratulations of many friends on Sept. 10, his birthday. Mr. Shirreff was born in Chatham, N. B. on Sept. 10, 1865.

The recent Japanese disaster is held responsible for a loss of $50,000 to the city of Ottawa. The Civic Hospital Commission, under agreement, holds about $50,000 worth of stock in the Whalen Pulp and Paper Company which recently went into the hands of a receiver. The stock, which is held in trust by the Civic Hospital Commission, formed a part of the estate of J. C. Cox, veteran lumberman who died leaving a large share of his estate to St. Luke's Hospital.

John Richard Williams, aged 17, employed at the plant of the Fort William Paper Company, Fort William, Ont., died a few days ago as a result of injuries received when he was caught in the shafting at the mill. The unfortunate young man's leg was torn off at the knee.

The Hinde & Dauch Company, Limited, box board manufacturers, Toronto, are proud of the prowess of their girl employees on the athletic field. On sports day at the National Exhibition Miss Fannie Rosenfeldt, crossed the tape first in several sprinting events in which some of her opponents were a number of fast girl sprinters from Chicago and Buffalo. In the same week, by rapping out base hits when they counted, and every player taking reckless chances on the bases, Hinde & Dauch girls won the Toronto Ladies Baseball Championship of 1923, when they defeated Athenaeum girls in the second straight game at Sunnyside. Both teams went into the fray hammer and tongs, and the leadership changed three times before Hinde & Dauch girls slapped over six timely runs in the seventh frame, securing a commanding margin.

Lieut-Col. Thomas Gibson, Vice-President of the Spanish River Pulp and Paper Mills, Limited, Toronto, will be one of the speakers at the opening of the Fall Fair in Ingersoll, Ont., his native town, on Sept. 25.

By a majority of 1,660 the ratepayers of Fort William, Ont., carried the by-law granting certain privileges to the Great Lakes Pulp and Paper Company which will erect a pulp and paper mill near Fort William.

Work has been commenced on the power transmission line at Dryden, Ont., from the Town Hall to the power house of the Dryden Paper Company. The new poles are on the ground and will support a wire big enough to carry the full load required by the town of Dryden for years to come.

The Thunder Bay Paper Company, Port Arthur, Ont., has decided to buy the site which the mill at present occupies, and has offered the Parks Board of the city $25,000 for it. A committee was appointed by the Council to take up with the Thunder Bay Paper Company all matters connected with the sale of land now occupied by their mills, making reservation for the right-of-way of the city's utilities. The offer of the company for the purchase of the site was accepted.

T. Watson Sime, of Toronto, a director of the Spanish River Pulp and Paper Mills, Limited, has gone on a trip to England and the Continent.

A. H. Chitty, of Sault Ste. Marie, Ont., treasurer of the Spanish River Pulp and Paper Mills, Limited, is spending some days at the head office of the company in Toronto.

W. N. Hurlburt and J. G. Sutherland, of the George H. Mead Company, Dayton, Ohio, were in Toronto for a few days last week.

T. H. Watson, a director of the Spanish River Pulp and Paper Mills, Limited, has returned to Toronto, with his family, after three months spent in England and France.

W. G. Finlay, of the Strathcona Paper Company, Strathcona, Ont., was a business visitor in Toronto last week.

George W. Pauline, of Ritchie & Ramsay, Limited, Toronto, has returned from a trip to England where he visited his father, who is connected with the Fletcher Manufacturing Company, one of the leading British paper jobbers.

AUGUST STATISTICS ON NEWS PRINT

Since the Federal Trade Commission discontinued the compilation and distribution of pulp and paper statistics, the News Print Service Bureau is the official source of information on newsprint paper, and the American Paper and Pulp Association for other grades. The following paragraphs are from the Bureau's Bulletin No. 68.

The 68 reporting companies produced 247,325 tons and shipped 243,128 tons during August. Production exceeded shipments by 4,197 tons. Production figures include 2,415 tons of hanging, of which 1,137 tons were made in Canada.

Comparing production of 51 identical companies during the first eight months of 1923 with that of the same period of 1922, the United States companies show an increase of 76,953 tons or 9 per cent., the Canadian companies an increase of 137,405 tons or 19 per cent. and the total of all these companies shows an increase of 214,358 tons or 14 per cent.

The average daily production of newsprint paper by these 51 companies reporting for August amounted to 97.5 per cent. of the average daily output during the three months of greatest production in 1922, with allowances for changes in machines.

Stocks of the same companies during August increased 2,852 tons at mill points in the United States and 704 tons in Canada. Total stocks of these reporting mills amounted to 37,183 tons or 3,556 tons more on August 31 than on July 31. These stocks are equivalent to 4.3 days' average production, about 18 per cent. of which was at British Columbia mills that ship by water.

NEW MACHINES MAKE MANY TONS

Started in 1923

Company	No.	Make	Size	Tons	Month
Ft. William	1	P. & J.	196	80	January
Washington	1	B. & S.	164	60	January
St. Lawrence . . .	1	D. E.	164	60	February
Belgo	1	Walms.	232	85	February
Ft. William	1	P. & J.	196	80	April
St. Lawrence . . .	1	D. E.	164	60	May
Oswegatchie . . .	1	B. & S.	164	50	July
Bathurs	1	Walms.	160	50	August
Total	8			525	

To Start in 1923

Company	No.	Make	Size	Tons	Month
Algonquin	1	B & S.	204	80	September
Consolidated . . .	1	Beloit	160	65	October
Belgo	1	D. E.	232	85	November
Kenora	1	D. E.	234	100	December
Total	4			330	
Grand Total. . .	12			855	

To Start in 1924

Price	1	Walms.	234	100	January
Donnacona	1	Walms	234	100	January
Bathurst	1	Walms	160	50	(?)
Price	1	Walms.	234	100	(?)

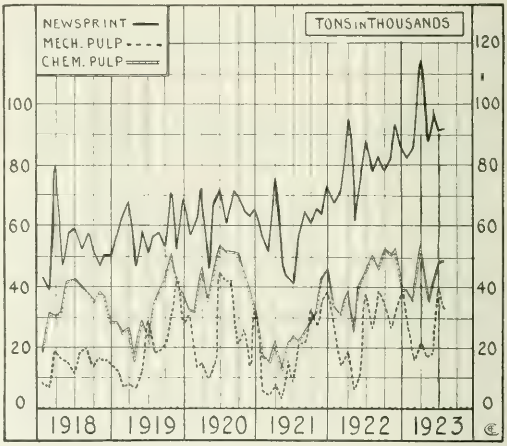
—News Print Service Bureau Bulletin.

EXPORTS OF NEWSPRINT AND WOOD PULP IN JULY

Canadian exports of newsprint in July were 92,959 tons, a slight increase over the quantity for June, which was 92,852 tons, and an increase of 16,000 tons over the figure for July 1922.

Mechanical pulp exports were 34,047 tons compared with 39,776 tons in June and 26,873 tons in July 1922.

Exports of chemical pulp totalled 49,877 tons and included 12,590 tons of bleached sulphite; 24,819 tons of unbleached sulphite and 12,468 tons of sulphate pulp.



The chart prepared by the Canadian Pulp and Paper Association shows the monthly exports, in tons, under these three headings since the beginning of 1918. The large increase in our exports of newsprint will be noted.

The total exports for the first seven months of this year and last year were as follows:

	7 Mos. 1923	7 Mos. 1922	Increase % in 1923
Newsprint	643,724 tons	534,344 tons	20%
Mechanical Pulp	172,225 tons	144,144 tons	19
Chemical Pulp	307,932 tons	265,660 tons	16

Almost every pulp and paper executive has a hobby to which he devotes considerable time and attention. Donald Fraser, of the Fraser Companies, operating a pulp mill at Edmundston, and contemplating the erection of a paper mill at the mouth of the Tobique river, is actively interested in advancing the cause of prohibition. Mr. Fraser, has been for many years, president of the New Brunswick Temperance Alliance, which is the pro-prohibition body in New Brunswick. Although he makes his home in Plaster Rock, which is in the northern section of the province, Mr. Fraser travels considerably in attending regular meetings of the Alliance.

Woodlands Section

WHO'S TO GROW THE NEXT NEWSPRINT CROP?

By John W. Dafoe, Managing Editor Manitoba Free Press, and Director Canadian Forestry Association

The question "Who's to grow the next newsprint crop?" is not as idly speculative as it sounds. More than thirty million newspapers are run off the presses of the United States and Canada every week day. Their raw material is really a flattened-out log of spruce or balsam. We forget sometimes that newsprint is not a synthetic product. Ninety per cent of every ton is fibre from wooden logs and logs are the harvest of a forest tract.

If the rapid destruction of our forests by human-caused fires proceeds at the present pace of four thousand conflagrations a year, it takes no prophet to foresee a newspaper industry driven into a corner by scarce and costly newsprint, with no hope of relief until new forests have been allowed to grow.

I think the time has arrived when the problem of forest conservation must be taken aboard by the newspaper publishers of Canada. Pulpwood is growing alarmingly scarce and prices will be increasingly gauged by the factors of forest supply and accessibility. We have left forest conservation to the mercies of lumbermen and politically minded governments, heedless of the fact that the lumberman operates for a living and it is doubtful if he has any more moral or patriotic responsibility for the state of the forests than a publisher. On the other hand the governments formulate forest policies as public opinion drives, and public opinion, to a greater or less degree, takes its mould from newspaper information.

The newspaper publishers of today are, if they choose to be, the principal actors in the new campaign to stop forest vandalism and place the timber resources on a basis of permanent production.

LARGE TIMBER AREA IN P.Q., TO BE PLACED ON MARKET

The lease by auction of a large area of timber limits, located on the north shore, where surveying is now being carried out by hydroplane for the account of the Lands and Forests Department, will take place late this fall.

The intention of the Provincial Government is to develop that region and establish definitely there the pulp industry, which would help in giving the residents of that coast, in addition to fisheries, permanent means of earning their living.

As far as Quebec is concerned, it was learned this morning that the lease of those limits will be preliminary to the establishment of a lumber mill as forecasted several months ago by Premier Taschereau.

The exact location of the new mill has not yet been divulged, but it is stated that it will be one of the most important constructed in the province and will give employment to a large number of men.

Coincident with this report it is also reported in semi-official circles that a large pulp and paper mill is to be built early next spring in Chicoutimi and Lake St. John district.

PULPWOOD RESOURCES HEARINGS

The first public hearing of the Royal Commission appointed to investigate the pulpwood resources of Canada will be held in Halifax on October 2. This is the only date which has yet been decided on by the commission, but hearings in other Maritime Province cities will follow the Halifax one. At the headquarters of the commission here, it was stated that ample notice of the sittings of the commission would be given to the public, so that those persons desiring to make representations would have an opportunity to make preparations. In the meantime, the organization work of the commission is going on. It is probable that hearings will be held from coast to coast.

U. S. WOODLAND'S SECTION TO TALK EMBARGO

The program of the Woodlands Section's Chicago meeting on October 9, which will be an important feature of the Fifth Fall Business Conference of the American Paper and Pulp Association, to be held at the Drake Hotel the week of October 9, includes interesting reports on the practice of forestry by the paper industry of the United States, and on the pulpwood situation.

Raphael Zon, Director of the Lake States Forest Experiment Station, of the United States Forest Service, has been invited to address the meeting on the relation of the Forest Service to the paper industry of the Lake States.

The principal topic for discussion will be the threatened Canadian pulpwood embargo and its effect on the practice of forestry in the United States and Canada, Prominent foresters on both sides of the line will speak on this subject.

The Armstead Snow Motors of the United States, Inc., will show a motion picture film which Col. W. E. Haskell of the International Paper Company, has characterized as the most thrilling and spectacular which he has ever seen.

Pulp and paper mill executives, their foresters and managers of their woods departments, etc., will be very welcome at this meeting.

HOW IT HAPPENED

A lumberjack with a broken leg was taken to a hospital for treatment. After the leg had been set, the nurse asked him how the accident occurred. He replied:

"You see, Ma'ma, it was this way: I was skyhooking for the Potlach Lumber Company and I had only one ground mile. He sent up a big blue butt that was a heavy one. I saw her yaw and yelled to him to give her a St. Croix, instead of which he threw a sag and gunned her, and that broke my leg."

"Yes," the nurse replied, "but I don't exactly understand."

"Neither do I," said the lumberjack. "That darn fool must have been crazy."

The Christian's troubles are like those of other people, but his refuge is unlike those of non-Christians.

LONDON STRIKE OVER—UNREST IN NORWAY

(From Our London Correspondent)

London, August 28, 1923.

The London strike of dockers is over and supplies of pulps are being gradually cleared. The congestion is enormous and it will be fully a month before the docks present any sort of a normal appearance after the past eight weeks hold up of shipping. Scandinavians were complaining bitterly of the strike, but it looks as if Norway is in for another strike among the paper and pulp workers. The worst feature is that one never knows where a strike is going to stop in Norway. The cellulose and pulp markets are weakers in Scandinavia, owing to unsettled labor conditions. A number of concerns have, however, sold their production for the remainder of the year. The same may be said of the paper market. All paper mills are fully employed; but prices are not regarded as satisfactory, yet the products of the mills can be sold cheaper in the British market than what the British mills can produce them for. Scandinavians are hoping to raise their prices and needless to say, British mill owners hope that it will not be long before some action is taken in this respect. The London strike impeded business in London as pulp and paper shipments were held up at the docks for eight weeks, including supplies from Canada. The latter, however, were dealt with in some cases owing to the proximity of the mills. But for the time of the year conditions are not at all satisfactory. Business is from "hand to mouth," if one might use the expression, and the uncertainty of international affairs, labor unrest and holidays—buyers finding business dull go off for a rest—all add to the depression. Indeed things in some quarters are so discouraging that a few paper mills are closed down until further notice. Still we must trust to the future. There is one bright element to record and that is the large shipments of pulp from Canada. The last one reached 10,883 tons, more than double the supplies from the Scandinavian mills. Prices of pulps are about as follows, f. o. b. etc.,:

No. 1 Bleached Sulphite	£21
No. 1 Easy Bleaching	£16½
No. 1 Sulphite (newsprint)	£15½
No. 1 Unbleached Soda	£16½
No. 1 Unbleached soda (kraft)	£15¼
Groundwood, moist (spot)	£5¼
Groundwood dry (spot)	£10½

There is a tendency for groundwood to harden in prices and quotations for 1924 are being made on a higher level than the prices I have quoted above.

Mr. Dubuc Returns Home

Mr. J. E. A. Dubuc, of Chicoutimi, returned home to Canada a few days ago. He was looking much better after his visit to France and England, where he has numerous friends. He will just arrive in time in Canada to have a final consultation with Sir Fred Becker on their many interests. It must be getting on for 12 years since I first saw Mr. Dubuc in England and I noticed this year the strain of work on him. His holiday has, no doubt, made him look better and his friends on this side of the Atlantic hope he feels improved.

Australia Again

In view of the Imperial Conference meeting in October the Commissioners of Australia are deluging the newspapers with the great part Australia has played in encouraging trade within the Empire. They do not say that there is one preference for the British sellers and one for the Canadian. Now that it has been definitely decided that forestry and pulpwood and pulps are to be discussed at the Imperial Conference, it is to be hoped Canadians are insisting on their representatives having a case made out against Australia of making "fish" of one body and "fowl" of another body within the Empire. This wants to be a business conference—and at the outset it was intended to be such.

CLARKE BROTHERS LIMITED TO BE REORGANIZED

Clarke Bros., Limited, was incorporated in 1912 under a Nova Scotia charter and in 1919 under a Dominion charter to take over the business of W. G. Clarke and W. W. Clarke, who had been in business for over thirty-five years. Later a subsidiary company was formed under the name of Clarke Brothers Paper Mills, Limited, but in 1921 this company was absorbed by the parent company. In the fall of 1922 the company found themselves in difficulty and in March, 1923, foreclosure proceedings were taken by the bond-holders.

When the editor recently visited the mill at Bear River, N.S., he thought it a pity that a plant which was so well located and built should be standing idle for want of water and working capital. A plan has been completed whereby the necessary water will be provided for the mill, but in order to make the new plan function, it will be necessary for the holders of bonds already issued to exchange for the new issues that are a part of the reorganization plan. There are necessarily several issues of bonds such as first mortgage and refunding mortgage bonds. The first mortgage sinking fund 20 year 7 per cent. gold bonds, will amount to $740,000, and there will be an issue of refunding mortgage sinking fund 20 year 7 per cent. gold bonds to the amount of $2,000,000 of which $740,000 is to be reserved to cover the issue first mentioned. The first mortgage bonds will pay for the erection of a pipe line, and several other items and will leave a balance of about $239,000 for working capital. After paying back holders of bonds issued by Clarke Bros., Limited, there will be a balance to be held by the trustees, and sold later, if required, at the direction of the new Company.

There is also to be an issue of $2,350,000 of fully paid shares of stock to consist of $350,000 7 per cent. cumulative preference shares, $500,000 7 per cent. non cumulative preference shares, and $1,500,000 common stock.

A meeting is called for October 1st at 10 o'clock at the offices of Tilley, Johnston, Thomson & Parmenter, 255 Bay St., Toronto, for the purpose of considering and acting on resolutions which will facilitate the formation of the new Company.

It is understood that strong financial interests in Dayton, Chicago and Milwaukee are interested in the new concern.

NEW BRUNSWICK NEWS

The New Brunswick Lumbermen's Association of which Angus McLean of the Bathurst Company is president and H. E. Beedy of the Nashwaak Pulp and Paper Company, is vice-president, is placing before the New Brunswick Government, the protest against the increase in rates ordered by the Workmen's Compensation Board of New Brunswick. Also, lodged with the Government is a request that the board will give official recognition to the New Brunswick Lumbermen's Association. Hitherto, the members of the board, with characteristic arrogance have refused to recognize the Association.

UNITED STATES NOTES

Despite recent optimistic statements concerning the affairs of the American Writing Paper Company, it was announced last week that preferred and common stockholders have formed a protective committee, of which B. W. Jones, vice-president of the Bankers' Trust Company, New York, is president. Other members are: M. C. Branch, president of the Merchants' National Bank of Richmond, Va.; Murray H. Coggeshall of Coggeshall and Hicks; John T. Gillespie of L. C. Gillespie and Sons; Percy H. Johnson of the Chemical National Bank and Ridley Watts of Ridley Watts and Co. The committee intends to co-operate with representatives of the bondholders and with directors and officers of the company in preparing a plan that will save for the shareholders their equity in the company. Mr. Jones, in a statement, said: "It is generally known that a recapitulation is necessary to put the company back on a sound financial basis. It is too early yet to say what will be done. The company has bond interest to pay in January, and before that time much can be done to strengthen the company's finances.' According to present estimates, the company needs financing to the extent of from $2,000,000 to $3,000,000. It is considered likely that the burden will fall on the preferred stockholders through the issue of prior preference stock, which will either precede or wipe out the present 7 per cent cumulative preferred stock, on which there is now 158 per cent in accumulated dividends. On the basis of additional working capital requirements of $3.000.000 this would be at the rate of $21 a share for the preferred stock now outstanding.

The International Paper Company has completed and placed in operation its new Sherman Island hydro-electric power plant. A contract has been signed with the Adirondack Power and Light Corporation wherby the latter will take practically all the power output of the new plant for delivery in the Albany-Troy-Schenectady district. Construction of the plant which was started three years ago, is in line with the International Paper Company's intention to utilize wherever possible water power rights it possesses so that in time they may become a valuable adjunct to the earning power of the company.

Among the newer forms of waxed paper for household and other purposes lately put on the market by a prominent New York manufacturer are rolls of the material, 125 feet long, a foot wide and of heavy quality, that can be retailed profitably for 50 cents. The feature of this paper is that it can be unrolled without taking it from the container in which it is boxed, and therefore it does not get soiled or wrinkled. Another useful novelty is in the form of envelopes containing folded sheets of luncheon paper 12 by 14 inches in size. Eighty of these sheets come in an envelope to retail at extremely low prices. Each sheet may be withdrawn without disturbing the others, thereby keeping them all clean and fresh. To retail at 5 cents for an ounce box, the same manufacturer has brought out a special shredded waxed paper in green and red for Christmas trimming purposes. In green, purple and white, this paper has been used at Easter time for lining candy egg baskets, etc.

Dr. E. R. Baldwin, a Saranac Lake physician, has addressed an open letter to Dwight H. Ladd, chairman of the New York State Water Control Commission, urging that steps be taken to prevent the establishment of the proposed Racquette River Regulation District, which is declared to be sought for water storage by Adirondack hydro-electric corporations. Dr. Baldwin's plea is based on the belief that the exploitation of the Saranac Lake drainage area would prove detrimental both to health and to the recreational advantages of the locality, particularly the Tupper Lake region. Dr. Baldwin is a member of the Saranac Lake Chamber, which has joined other bodies in the Adirondacks section in opposing the constitutional amendment providing for the storage district. Chamber of Commerce officials declare the proposed district is sought by the International Paper Company, John G. Carlisle, president of the Power Corporation of New York and others. Most of the organizations opposed to the storage district plan are represented in the Committee to Prevent the Exploitation of the Adirondacks, which has at its head John G. Agar, president of the Association for the Protection of the Adirondacks. A broadside attacking the proposed water storage plan was issued last Saturday from the office of the Committee, 154 Nassau Street, New York City.

C. J. Taylor, writing from Boothbay Harbor, Me., to the New York *Times*, deplores the fact that the valuable resources of the State, "the only great natural playground in the East," are being laid waste by the pulp mills. Speaking of the gradual denudation of the Maine forests, Mr. Taylor says: "The pine is gone and king spruce is almost down and out. The State of Maine is being wood-pulped to death. Down to the coast line comes the giant grip of the pulp mills. Lately on Cape Newagen, which is the southerly tip of the beautiful Island of Southport, a man got control of a piece of woodland and cut out 500 cords of spruce and white birch for the pulp mill. He left a beauty spot a scene of desolation. Other points are going the same way. Happily, in the case of Newagen, a public spirit was warmed into life, and some of the woods were saved.

A little money is being made by the present generation, but a great want stares the future. The forests are going; the freshets are coming. Where hundreds of dollars are now made, thousands will be lost in flood-swept towns. There is a punishment for every crime, and what is more criminal than the destruction of natural beauties?

The State should take some cognizance of this matter. Possibly a law passed stating the size of trees that may be cut for pulpwood might, at the present, help."

The Forest Service of the United States Department of Agriculture has opened two new experiment stations where forestry in all its phases will be studied on a larger scale than ever before by the Forestry branch of the Department. One of these new stations is called the Northeastern Forest Experiment Station, with headquarters at Amherst, Mass., where it will co-operate with the Massachusetts Agricultural College. The other is the Lake States Forest Experiment Station at St. Paul, Minn., which will be aided in its work by the Minnesota Agricultural College. S. T. Dana, formerly Forest Commissioner of Maine, has been appointed director of the Amherst station. He will be assisted by Walter B. Meyer, who has just recently returned from a year's study in the forest schools of Sweden.

The Markets

CANADIAN TRADE CONDITIONS

Montreal, September 18. — The local paper trade is still quiet. Although jobbers are looking for an improvement in the near future, conditions just now are not what may be described as bright. There is a disinclination to purchase in large quantities, while collections are not satisfactory. The printing section is a little more active, but there are too many firms scrambling for what orders are available, with the result of too close prices to afford a reasonable amount of profit.

The mills report that business is light, although in one or two departments there is a fair volume in hand. Some mills which had a considerable tonnage to fill, state that the last two months have shown an appreciable decrease. They are however, confident that trade will soon pick up.

In June, Canada exported 298 tons of wrapping paper to the U. S. A. against 24 tons in June 1922. The States however, bought very largely of this class of paper from Germany and Sweden, the exports from those countries being 1,403 tons and 1,151 tons respectively, compared with 387 and 1,539 in June of last year.

The call for newsprint continues to be satisfactory. Canadian mills will soon be producing increased quantities of paper, for which of course an outlet has to be found. We are now dependent almost entirely upon the United States for absorbing the great bulk of our tonnage, and indeed, this year have not found it necessary to seek other markets to any considerable extent. But with the greater production, Canadian mills will be forced to secure additional customers. We understand that steps have been taken to that end, and that we may hope for a largely increased business in some of our sister Dominions. Competition there is particularly keen, especially from Scandinavian mills, but the excellent paper produced in Canada will no doubt count for a great deal. British companies have done a considerable trade with Australia and New Zealand this year, sending 31,272 tons to Australia and 2,999 tons to New Zealand during the six months ending June, these figures comparing with 5,156 and 773 tons during the six months of 1922. Finland, Norway, Sweden, and Newfoundland are the main sources of Great Britain's outside supply. Of the 64,130 tons imported during the six months ended June, Finland sent 21,680 tons, Norway 10,519 tons, Sweden 10,668 tons, and Newfoundland 13,817 tons. Canada did not sell the Old Country a cent's worth.

Conditions of woods operations will make for an increased cost of pulpwood. The advance in the cost of labor is appreciable, and on top of this the Quebec Government by order-in-council has decided to put into force the 1920 tariff of stumpage rates, which were suspended during the 1921-22 and 1922-23 seasons. The limit holders represented to the Government the advisability of postponing the tariff for another year, but the request has been turned down, with the promise however, that wood from regions affected by forest fires will be charged on a lower scale. The argument in favor of the lower tariff was that it would encourage the cutting of lumber and pulpwood, and thus give employment. Apparently the Government is of the opinion that the lumber and pulp and paper industries have recovered to such an extent as to justify the larger stumpage dues.

The outstanding feature of the pulp market is the reduction in prices of bleached sulphite. The lower prices were set in the United States, and have been met by Canadian producers. The reductions are $5 per ton in the first grade and $10 in other grades. These are the first cuts since December, and came as a surprise to consumers and to the great majority of the sulphite mills. In the opinion of some buyers the reduction occurred at an unfortunate period, as the paper mills had set their prices on the basis of the sulphite quotations which had been so long in force. The new list naturally had a disturbing effect, causing the revision in some instances of paper prices settled on the previous quotations of pulp. The reductions also had a certain amount of influence on the sulphite market. Groundwood is still very firm, there being a good demand for stocks. The water conditions in the Eastern States have been unfavorable to free grinding with the result that Canadian pulp has been in strong request.

Ontario Market News

That greatly improved conditions in the pulp and paper industry are on the way and that in some lines they have already arrived is the testimony of most of the millmen and jobbers interviewed this week. Distributers of most lines of paper say business opened up well at the beginning of the month and that sales are keeping up fairly well although the era of big orders does not yet appear to have been reached. Most paper consumers continue to buy lightly but the total of orders being booked just now indicates growing business and it begins to look as if it would only be a matter of a short time when the pulp and paper trade would be back to its accustomed stride. It is easy to discern a better and more optimistic tone to the market all round and in the opinion of most firms the dullness which has characterized the industry throughout the summer is definitely over. Manufacturing concerns are beginning to show greater activity and the book paper mills, which have been running rather light during the past few weeks, are now reporting that publishers and other consumers, are again buying freely. The newsprint industry is booming and the box board manufacturers report a good volume of business as the result of activity in the paper box industry. Manufacturing stationers report a distinctly better tone to business. Travellers for these concerns are now out from coast to coast taking orders for the coming season and the reports sent into their houses are distinctly encouraging as to the outlook for good business this fall. Shipments of Christmas papeteries and other goods manufactured and handled by the stationery firms are now going forward in volume that indicates considerable faith in the fall and Christmas trade ahead. Envelope manufacturing firms are fairly busy although as yet there is not a great deal of pep to the bond, ledger and writing paper section of the paper trade. The pulp situation remains unchanged with last week's prices prevailing and with the market none too active. Waste paper dealers report satisfactory sales of waste to paper houses although rags are not so brisk as they were. The demand for this class of stock from the book mills has not yet picked up to the extent looked for although the market appears to be showing some improvement. Roofing mills are calling for stock quite liberally and the board mills are sending in requisitions for box board cuttings in almost unlimited quantities.

NEW YORK MARKETS

New York, September 15. (Special Correspondence) —The improvement in the paper market which was noted following Labor Day has continued unabated this week, and demand has broadened further for practically all kinds of paper. Business generally is developing in a slow but consistent and very healthy manner, and there is every indication that paper manufacturers and jobbers are due to experience an active market for the balance of the current year. It will probably be several weeks yet before demand for paper reaches the proportions customary for the fall season but there are numerous signs that the market is gradually working up to this point, and that paper producers are being called on to increase their output to take care of the increasing movement into consuming channels.

That newsprint consumption is on the rise can be readily seen by a glance at the New York newspapers. During the summer there is less print paper used — this is a proverbial condition in this kind of paper — but since the Labor Day holiday a steady increase in consumption has been noted. Every day this week one of the largest circulated morning dailies has printed an announcement that so and so many columns of advertising were omitted because of lack of space to print all of the advertisements offered. Several of the afternoon papers have printed similar announcements nearly every day. This means that advertising in the daily press is on the increase after the summer lull and that publishers, who are limiting the size of their issues, are having more business offered them than they can accommodate. In other words, publishers are printing as large issues as they feel safe in publishing with present available supplies of newsprint.

There is very little supply of newsprint to be had in the open market. Manufacturers with few exceptions have their production for the remainder of the year sold on contracts and are running their machines at close to maximum capacity against such commitments. Newsprint is being shipped from mills about as quickly as it leaves the paper machines, and very little supply is left for disposal to transient buyers, who are experiencing unusual difficulty in locating available supplies. There is some supply coming in from abroad and it is presumed that transient purchasers are covering their requirements chiefly with this paper since they are meeting with scant

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success in finding domestic mills with newsprint for prompt delivery.

Book papers are in better demand than in some months. Advertising in fiction and trade periodicals is on the increase and these publications are adding pages to almost every issue, which, of course, is resulting in a steady growth of consumption of book paper. Mills are gradually speeding up their production as new business is received. Eastern manufacturers are reported running their plants at close to maximum output, while the large book paper plants in and around Kalamazoo are reported working at a good rate of capacity. Prices of book paper incline higher. No actual changes of note have been recorded in the past few days but a stiffening process is observed and it seems likely that quotations will be marked up in the near future. Machine finished book is quoted at an average of 6.50 to 6.75 cents per pound f.o.b. New York. Some exceptional sales down to 6.25 cents have been recorded, though the stock involved was said to have been of rather poor quality, while on the other hand m.f. book of some grades is selling at 7 cents and higher New York.

Trade activity in box boards is gradually broadening. Paper box manufacturers are purchasing board cautiously but as their business increases they automatically absorb larger amounts of board, and the movement toward consumers is beginning to approximate the tonnage usually noted at about this time of the year. Prices of board are firm. There is keen competition between mills to secure as large a part of the available business as they can but quotations are being well maintained. The fact that board prices have advanced only a matter of $2.50 to $5 a ton in the face of a sharp rise in raw material costs during the past month or six weeks is encouraging to box makers, who are not hesitating to buy when in need of supplies although they are averse to stocking up. Plain chip board is quoted at $60 a ton f.o.b. New York, and news board at between $62.50 and $65, and manufacturers emphasize that if waste paper rises any further they will be obliged to raise prices of board.

Coarse papers are in fair call and steady in price. A better movement of tissue paper is noted, and retail merchants the country over are laying in supplies of wrapping paper in preparation for the preholiday season. Fine papers are in good demand. Holyoke mils are gradually resuming operations after the strike of firemen and are enjoying a broader outlet for their product. A strong factor in bonds and ledgers is that jobbers' stocks are exceptionally low, therefore necessitating that they place orders with mills as quickly as their own customers come to them for paper.

GROUND WOOD — Mechanical pulp is in probably a stronger market position than any other description of papermaking raw material. According to reports, water conditions have shown little or no improvement thus far, and a great many producers are handicapped in their operations by low water, with the result production is down at the bottom while consumers are anxiously looking around the trade for available pulp. Prices continue to stiffen, and now that some sales have been recorded at as much as $50 a ton f.o.b. grinding mills, many members of the trade are predicting market levels will go beyond this point. Canadian ground wood is figuring in most of the current transactions in the open market. Domestic producers are in most cases buyers today instead of sellers, needing pulp for their own use, and there is practically no supply of domestic ground wood available except to regular buyers. Consumers in Upper New York State, in Wisconsin and elsewhere in the States are looking to Canadian grinders for pulp and are freely paying $45 to $50 a ton f.o.b. grinding plants for spot shipments. Even at these high prices ground wood is scarce since most producers are sold up for a month or more and are cautious about entering additional commitments because of unfavorable water conditions. Domestic ground wood is priced nominally at around $40 a ton, the larger amount of moisture in domestic pulp explaining the lower price prevailing on this pulp than on Canadian ground wood.

CHEMICAL PULP — What appears to be the principal factor in the chemical wood pulp situation at present is that a number of the largest paper mills in the States, and especially the big board plants out through the Middle West, have their pulp requirements fairly well provided for over the next several months and that accordingly they are not keen about augmenting their stocks or buying commitments. Sellers in consequence find that the outlet for pulp at the moment is narrower than they had anticipated at about this time, and in at least some cases pulp is being offered at price concessions. There is no concerted pressure on the market but the fact remains that importers and domestic manufacturers are in certain instances shading prices, and this prompts buyers to look around for "cheap" lots of pulp and gives prices somewhat of an easy undertone.

On the whole, there seems to be a fairly large movement of pulps into consuming channels. Some big shipments have lately arrived from Scandinavian sources, nearly all of which pulp, it is stated, is on back orders from paper mills, and domestic producers are shipping out their product in a steady way and in considerable tonnage on contracts. Quotations on No. 1 foreign unbleached sulphite range from about 3.10 cents a pound up to 3.40 cents ex dock New York, depending on the quality of the pulp concerned, while foreign bleached sulphite of No. 1 grade is quoted at around 4.50 cents a pound on the dock. Domestic bleached sulphite is quoted at 4 to 4.50 cents a pound f.o.b. pulp mills, No. 1 unbleached at 3 to 3.25 cents, easy bleaching at 3.50 cents, and bleached soda pulp at 3.75 cents. Foreign kraft is priced at around 3.25 cents ex dock New York, and domestic kraft at between 3.25 and 3.50 cents at pulp plants.

RAGS — A little broader demand for roofing rags has been noted this week and prices evince a strengthening trend following a period when demand was slow and values were on the decline. New York York dealers report sales of No. 1 roofing stock at 1.45 to 1.50 cents a pound f.o.b. this city, and of No. 2 packing at 1.35 cents, while foreign dark cottons have sold to felt paper mills at 1.52½ cents a pound ex dock New York. Old white rags are inclining higher in price and dealers lay much stress on the scarcity of these grades. Thirds and blues also are firm and in moderately good demand. Repacked thirds and blues are bringing 3 cents a pound at dealers' shipping points, while twos and blues are selling at 3.25 cents. New cuttings are under improved inquiry. Fine paper manufacturers are buying carefully but they are placing orders for larger amounts of most kinds of cuttings and they readily meet the prices asked on such rags as they require. No 1 white shirt cuttings are quoted at 12.50 cents per pound f o b New York, unbleached muslins at 11.25 cents, fancy shirt cuttings at 6 cents, light silesias at 8 cents, blue overall cuttings at 8 cents, and No. 1 washables at 5 cents.

PAPER STOCK — The feature in waste paper in the New York market is the strength in old folded newspapers. Packers claim that there is an undeniable shortage of this grade and that they are having much difficulty filling the orders placed by board mills, with the result prices tend firmly upward. Sales at 1.05 and 1.10 cents a pound f.o.b. this city have been recorded, and during the past couple of days dealers have insisted on a dollar or two per ton more quotations now ranging generally between 1.15 and 1.20 cents f.o.b. New York. Old No. 1 mixed paper is steady in price and demand at around 85 cents a hundred pounds New York, and common mixed paper is selling at 50 cents a hundred pounds. White shavings are quoted at 4.25 cents a pound New York, for No. 1 hard shavings, and at 3.35 cents for No. 1 soft shavings. Old kraft paper is inclining higher in price with dealers asking at least 2.25 cents a pound f.o.b. New York, and white blank news cuttings are bringing this same price. Old magazines are selling at from 1.75 cents a pound f.o.b. this city upward, depending on the packing, and ledger stock at 1.90 to 2 cents per pound.

OLD ROPE AND BAGGING — A routine call is noted for old manila rope at prices ranging from 5.25 to 5.50 cents a pound New York for No. 1 domestic rope. Strings are firm and in good demand. Old bagging is dull, and consumers have no trouble buying No. 1 scrap at 1.25 cents a pound at dealers' shipping points and roofing bagging at one cent a pound.

THE CANADIAN TRADE INDEX

This excellent volume, which should really be indispensable in the office of every business man in Canada, is published by the Canadian Manufacturers Association with headquarters in Toronto. The price is $6.00. This 1923 edition comprizes four parts and includes the following major divisions:

A list of Canadian Trade Commissioners.

A list of British Consuls.

An alphabetical list of manufacturers with addresses, branches, export representatives, trade marks, brands, etc. This is printed on blue paper.

A directory of the manufacturers of Canada, classified according to the articles made. Exporters are designated by an asterisk.

A directory of exporters of agricultural produce and allied lines, including names of forwarding agents, export merchants, etc.

An alphabetical list in French and also in Spanish of headings in the directory of manufacturers. On blue paper.

Canadian Manufacturers Association organization and services.

A list of Canadian materials and produce.

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BRITISH TRADE NEWS

From Our London Correspondent)

London, Sept. 1, 1923.

The British paper trade business and business in the British pulp market are as dead as can be. There is a holiday feeling on and international affairs are completely upsetting things all round. It will be a happy day for British mill men when Germany, France, Italy, and other continental places get settled down and bring their money markets into a state of decency. At present chaos prevails and in Scandinavia labor troubles add to the dilemma. It is the opinion of many prominent men in London today that the forthcoming winter is going to be one of the worst since the Armistice and leading labor leaders predict that fully 2,000,000 will be unemployed— a serious outlook for a country that has just emerged from one of the worst wars in history. The paper industry seems to be up and down—flourishing one month and depressed another—and if it were not for the exports to the colonies and Dominions, which are holding business together, the ramifications of the mills would be a critical state. Some of the mills are closed and some are not able to make enough to meet dividends. Newsprint firms are the only people who look busy and it is quite evident they would not object to more orders.

Foreign Competition

Added to the troubles of the mill men are the foreign competitors in the English market. No one can object to foreigners selling papers in the country, but it would be one of the finest things in this history of the British industry if some papermaker's engineer could invent a catch-alive trap to ensnare the foreign price-cutter. He is a notorious individual, particularly in London, and it is much "below the belt" the way he sells. These foreign prices are doing endless harm. Naturally the buyers want paper such as kraft, wrappings of all kinds, wallpapers, etc., at a price next to nothing—and they get it. No Canadian and no British mills could sell at the prices, except they wanted liquidation; but the idea is to "get shut" of the stuff in the hope of paving the way for a future market. There is only one way of dealing with these kind of gentlemen and that is get up a good publicity scheme against them and let it loose amongst the British public with a few home truths on continental methods and practices. These foreign price cutters are throttling Canadian and other Dominion sellers in the British market and there is a cure for this if the British papermakers could agree amongst themselves by demanda tax—a choking one—on all papers from foreign sources. It would help Canadian pulp and paper and curb the ambitions of continental speculators.

Now We Know!

Sir George Sutton, chairman of the Amalgamated Press (1922) Ltd., London, one of the late Lord Northcliffe's companies, presided at the annual meeting the other day. He said, *inter alia* "The Amalgamated Press has the controlling interest in the Imperial Paper Mills, Ltd., the second largest paper mills in this country and the recent additions to its plant have made it probably the most up-to-date papermaking concern. The Imperial Paper Mills, in its turn, has the largest interest in the Gulf Pulp and Paper Coy., situated at Clarke City, in the Province of Quebec. A large proportion of the mechanical pulp used in the production of your periodicals is drawn from this source and it is essential that your directors should maintain a very careful financial policy in view of the fact that it may be necessary at an early date to provide for the purchase of further timber limits to ensure an ample supply of raw material required."

Now the tests for converting straw into pulp are being made at the Imperial Paper Mills, in Kent, but Sir George Sutton did not touch on the subject. These mills are always on the look-out for new sources in raw materials, and it is to be hoped the Canadian straw will meet the tests favorably.

The Exhibition

The Canadian buildings are being pushed well ahead in the British Empire Exhibton grounds and the other day I was inspecting a plan of one of the railway Dominion railway palaces. Newfoundland's scheme is also well in progress . I would suggest that if Canadians intend coming to London as strangers for the first time and not having friends, they should get into touch with reliable people for the purpose of securing hotel accommodation. It must be remembered that people from all parts of the world will be in London for the exhibition and the man who has not a friend to help him, or to stop with, will stand a poor chance in any hotel. If he is successful in a hotel, charges will be high. Members of clubs in London would do well to get into touch with them about arrangements during the exhibition period. I throw these suggestions out in time as people in foreign parts are booking hotel accommodations already.

THE PRINCE HEADS THE EXHIBITION

The Prince of Wales within the past month has become President of the British Empire Exhibition. Last week he entertained a small party to luncheon at the exhibition grounds at Wembley, and explained his motive.

His motive as president of the British Empire Exhibition in asking them to Wembley Park was to try to inspire them with an enthusiastic interest in a project of the highest Imperial importance. He could assure them with confidence that the organization of the exhibition was now on a sound basis, and that they could reasonably hope that there was no obstacle now to hinder their progress to a brilliant success.

He said a brilliant success because a moderate success was no good. It was a bold challenge which the British Empire Exhibition made to the world when it undertook the task of organizing this venture so soon after the devastation and settlement of the Great War. That challenge must be carried through to the point of success, full, pressed down, and overflowing." They must show to the world that the Empire possessed the same unity, courage, and perserverance in peace-time as in the stress of war.

The British Empire Exhibition had enlisted the enthusiasm of the Dominions and Colonies, which, within the last few months, had in several cases increased their demands for space for exhibits. It was certain that they would have at Wembley Park a great pageant of Empire, in which would be represented all the races under our flag, and which would illustrate fully the economic resources of all our territories and our peoples.

The exhibition, too, had enlisted the powerful help of the great organizations of manufacturers and traders at the United Kingdom, which had responded generously to the appeal to form a guarantee fund and in other ways.

In conclusion, His Royal Highness stated that he was not suggesting that the press should treat the British Empire Exhibition with undue favoritism, or with any lack of candour, but he sincerely trusted that they would recognize that it was a project with a definite purpose fully worthy of serious and continuous support. If the British Exhibition achieved the success which they could help so much towards making, it might well mark a new era in Imperial trade and point the way to new paths by which to repair the ravages of the Great War.—Exchange.

Pulp and Paper Magazine
OF CANADA

A Weekly Magazine Devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades

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EDITORIAL

LOOKING AHEAD

It is some time yet to January and the members of the Technical Section doubtless have a great many things on their minds, but when they arrive in Montreal at the annual meeting, they would be sorely disappointed if the executive and program committee had not provided something distinctly worth-while in the form of papers and discussions. The executive are not mind readers, and are consequently liable to fail to be completely aware of what is desired by the other members of the Section. Their work will be very greatly helped, and the program will be made of far greater value to the industry if members would indicate immediately any subjects in which they are particularly interested that might be included in the program. It would be further greatly appreciated by the committee if coupled with suggestions for the subject of papers, there would be an indication as to who would be qualified to speak on the subject desired. It sometimes happens that a member feels that his work is too insignificant to bring before the Technical Section, but there should be no such feeling as this, because it is the building together of the items brought out in the course of a great variety of work which is going on here and there that makes the structure on which advance is based.

The Technical Section has a wide reputation for arranging excellent programs, and the reason for it has been largely due to the generosity and good nature of a comparatively small number of enthusiastic members who are always ready to step in and do their part, or a little more. There has been a very considerable growth in the membership of late, and the qualifications for membership are sufficiently exacting to insure a very high standard of ability on the part of those who are admitted. In view of this fact, we should have a constantly increasing amount of available material from which to draw. In fact, instead of the program committee going before the membership with an appeal for papers, there should be such a spontaneous supply that the committee would have to do considerable weeding out in order to present just the best papers available. There is a good deal of research work and development of control work going on in the various mills, and all of this material is of intense interest to all of the membership in one way or another. Besides papers on subjects of common interest which can be prepared by one member or another, and discussed by the whole body, there are some very vital questions that are being considered by the various committees of the Technical Section that will be presented in the form of reports, and will be discussed with a great deal of interest.

The point to be considered just now is for every member to give thought to the matter of our annual meeting and send any suggestions that he may have to the Secretary for the guidance of the program committee.

SCHOOL BOOKS ARE NEGLECTING CANADA

It is little wonder that there is a considerable migration of Canadians to the south of the border, when one considers that the very textbooks used in our Canadian schools are sometimes of American production and these very naturally and properly are written from the standpoint of the United States. This was brought out very forcibly by Mr. J. J. Harpell, publisher of the Pulp and Paper Magazine, in the discussion held at the initial meeting of the present board of officers of the Canadian Manufacturers' Association, of which Mr. C. Howard Smith is president, in Montreal last week. The matter of commercial geography of Canada is perhaps the most outstanding instance of lack of representation of Canadian opportunities and accomplishments. There is probably no subject which provides such opportunities for arousing the enthusiasm of the Canadian in his country and for his opportunities than is the case with the subjects pertaining to history and geography. It is unfortunately the case, however, that Canada lacks a comprehensive natural geography or commercial geography which adequately covers the subject. One instance is the appearance of an American book on this subject which purports to be comprehensive and which may or may not be typical, but yet no doubt one which is widely used either directly by students or as a reference book, mentions the wheat fields of the Dakotas, but disregards altogether the much higher yields per acre and total production of our Western Prairie Provinces. Canada is further slighted by lack of adequate reference to our silver and gold areas, our nickel and asbestos production, our pulp and paper industry and other features of our industrial life which make Canada a prominent or leading producer. This matter is worthy of serious consideration which is being given it by the Manufacturers' Association, and should be given by educational authorities because it is the impression that the child receives in his school days that largely determines his future career. It is most important and advisable that Canada's wealth of natural resources and industrial opportunities, invigorating climate and an attractive future should be properly presented in the textbooks studied by our boys and girls.

MR. ROBB AND IMMIGRATION

The Hon. J. A. Robb, recently appointed Minister of Immigration and Colonization, has issued a statement outlining a new policy of immigration. And we believe that its whole-hearted adoption and prosecution would help very largely to augment the tide of immigration to these shores. In such very largely augmented volume of immigration is to be found the solution — or, at any rate, a large part of the solution — of nearly all of our most pressing national problems, including the most pressing of all, that of the Canadian National Railways.

So far as it is possible, we are most solicitous that this augmented immigration should come from Great Britain. The Dominion Government, some time ago, formulated certain plans for obtaining immigration from this source. But, as we took occasion to point out at the time, these plans of the Government did not go far enough and showed scant likelihood of adding very largely, in the near future, to the number of producers in this country. In fact, we have never been able to regard them as, in any sense, adequate to the imperative exigencies of the circumstances in which Canada finds herself. Mr. Robb now announces that "in co-operation with the British Government, under the terms of the Empire Settlement Act, it is proposed to extend the schemes affording assistance to those of the agricultural and home-worker classes from the Mother Country." This announcement may mean much or little—let us hope it means much.

For our part, however, we have always recognized that, even at the best, all Canada's immigration needs cannot be supplied by the Mother Country. For one thing, we need more than the latter can furnish of the right stamp. For another, there are certain classes of rough work for which immigrants from the more Southern of European countries seem better suited. All such industrious European settlers as are capable of being transformed into Canadian citizens should be made welcome in the interests of the Dominion at large. In this connection, we are confident, subject to the proviso in our next sentence, that, in announcing that "as the British Isles alone cannot furnish a sufficient quota of the agricultural classes, efforts will be made to encourage immigration from certain areas of the continent of Europe and from the United States," Mr. Robb is proposing to proceed along sound lines. That is, always provided that it is regarded as essential, that, if settlers are brought to Canada from certain of the Southern European countries, they should be carefully hand-picked in Europe. For there is a danger — and this fact has been impressed on Canadians during the late war — in bringing to this country, in any really large numbers, aliens who are resolved not to be absorbed and assimilated, but rather to form colonies of their own and adhere to alien mental and political standards. Great care is needful in their selection.

It is announced that "facilities will be offered for the immigration of such skilled and unskilled labor (other than agricultural) as Canada may require from time to time." With this we are in hearty accord. We believe that it is necessary to open the doors wide if we are to bring to this country such a volume of immigration as will both substantially increase production and add to the wealth of the Dominion. We want to see the doors opened not only to farmers and farm laborers, but also to such an extent in other directions as will enable our manufacturers and business men to secure the skilled workers and other help they require in their industries. At present, they cannot get these. Nor will they easily be able to do so, if the Labor unions in this country can work their sweet will. We have a shrewd idea that it is the fear of offending these Labor unions that has been responsible for the lethargy and laxity that the Government has so long displayed in this matter of immigration.

As we have said, we are generally in agreement with Mr. Robb's enunciation of the new immigration policy. But, after all, "fine words butter no parsnips." The Government will be judged by deeds, not words. It has hitherto been so slack and procrastinating with regard to this question, all-important as it is, that one may well be pardoned for not being ultra-sanguine as to its policy being now inspired by a new spirit.

WHAT IS YOUR LIFE WORTH?

If you are a salaried man, you are earning, by the exercise of your brain or muscle, say $3,000 a year, at least one-half of which you employ in the support of your family. Then the money producing value of your life to your family is worth $30,000, since a policy of $30,000, when realized, will yield a sum which if invested at five per cent. would give your family $1,500 income a year. Is your life insured for anything like its full value?

THE BETTER WAY

A prominent member of the Imperial Forestry Conference said: "I am always worried to see the meagre forces of forest protection squandering their energies on the doubtful German theories of reforestation, when protection against fire, and making a forest fire a criminal offence, condemned by law as well as public opinion, seems to me to demand every cent that can be raised and every effort that can be made."

Improvement in Sulphite Cooking Method

By C. A. S. HAWKINGS, Chief Chemist, Price Bros. & Co.

In recent years there has been a tendency to look closely into the recovery of heat and SO in the relief from the digesters. The usual procedure followed is to cool the relief liquor and pass it into the raw acid. This cooling appeared to be a needless waste of heat which it might be possible to utilize for raising the temperature of the acid in the digesters thus saving the cost of steam necessary to supply this energy. Various schemes have been suggested in the last three or four years but for the most part have failed due to difficulties in operation and excessive repair costs. This has been due to the problem of pumping hot acid and the solvent action of such acid on construction materials.

Mr. L. B. Decker, Sulphite Superintendent of Price Brothers & Co., Limited, Kenogami, P.Q. started work on this phase of recovery in 1921 and has now successfully overcome the difficulties. In his process which is fully covered by patents, he was enabled not only to save steam but also to increase the yield per digester and improve the quality of pulp. In 1922 several trial cooks were made to compare this new process with the old one. While the actual figures varied slightly, they all showed a substantial saving. As a consequence the new system was installed throughout the sulphite mill and has now been in successful operation for over a year.

Recently two cooks were made for comparison and it is the purpose of this report to record these results as a matter of interest to the pulp and paper industry.

Description of Decker Injection Method

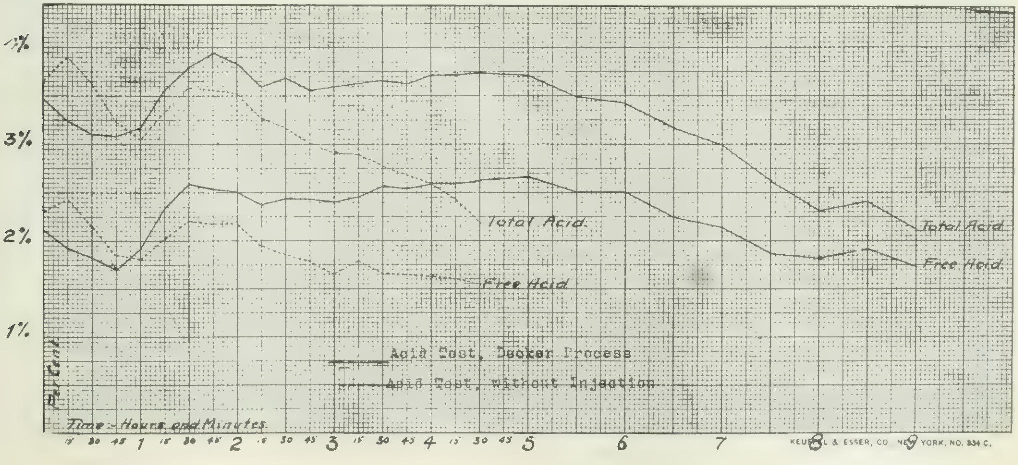
The method of procedure in the recovery process is as follows: All digesters are connected by a system of piping and valves so arranged that the top relief from one or more digesters may be led into the bottom of any other digester. The digester is filled in the usual way with chips and acid. Digesters which are in the process of cooking are now allowed to relieve into the bottom of this digester for a period of from two to four hours. During this time no steam is used. As soon as the relief is finished, the digester is shut off and the cooking starts in the usual way. This digester is then allowed to relieve into another digester. The process is so timed that every digester is subjected to relief from other digesters at various stages of the cooking and the net result is approximately equivalent to one complete relief for a whole cook.

Results Obtained

On July 21st, and 28th, two cooks were made for the sake of comparison. The following results were obtained:

COMPARATIVE DATA

	Decker Process July 21st. /23	Without Injection July 28th. /23
Wood used (cords) . . .	17.5	17.5
Wet weight (lbs.) . . .	69,777	69,779
Moisture (%)	34.00	35.53
Bone-dry weight (lbs.) . .	46,053	44,895
Acid used, total (%) . . .	3.97	4.26
Free (%)	2.53	2.59
Combined (%) . . .	1.44	1.67
Quantity of acid (gals) . .	25,000	25,000
Steam used (lbs. from and at 212 F.)	46,022	63,371
Pulp produced (tons air dry)	12.23	9.98
Screenings and knots (tons air dry)	0.22	0.65
Bleaching test (% 35% bleach)	17.1	33.7
Strength test (Standard method A. P. & P. A.)	39.0	32.6
Wood (cords per ton air dry pulp)	1.43	1.75
Steam (lbs. per ton air dry pulp)	3,763	6,350



Time of cooking (including relieving time if any	13 hrs.	10 hrs. 20 m.
Yield of bone dry pulp from bone dry wood (%)	48.44	40.19
Screenings (expressed as percentage of pulp	1.38	6.49

Distribution of Steam During Cook

Bringing digester to pressure (65)	16195	42247
From pressure to 110° C.	6337	4929
From 110° C. to 120° C.	5633	4929
From 120° C. to 130° C.	9857	5633
Remainder of cook	8000	5633
Total	46022	63371

While these tests do not presume to represent exactly the savings that could be made over a large period of operation, they serve the purpose of indicating a decided possible decrease in the cost of manufacture. The steam saved is largely but not entirely due to the heat reclaimed in the relief liquor. The increase in yield is partially explained by the smaller decrease in strength found in the acid when soaked up by the chips and a constantly rising temperature with additions of highly concentrated SO_2. However explained, the results show a saving that is well worth while and should prove of interest to those engaged in sulphite pulp manufacture.

WITHOUT INJECTION

CONDITIONS IN DIGESTER DURING FIRST PART OF COOK

Digester was steamed as soon as it was filled with acid. Zero time is the time when digester was steamed.

Time Hrs.	Min.	Temperature °C. from test cock	Analysis % SO_2 Total	Free	Combined
	0	37	3.65	2.30	1.35
	15	38 ½	3.90	2.43	1.47
	30	36 ½	3.62	2.14	1.48
	45	34	3.23	1.86	1.37
1		34	3.04	1.76	1.28
	15	42	3.33	2.02	1.31
	30	55	3.58	2.21	1.37
	45	57	3.55	2.18	1.37
2		61	3.52	2.18	1.34
	15	64	3.26	1.95	1.31
	30	67	3.17	1.86	1.31
	45	78	3.01	1.79	1.22
3		82	2.91	1.66	1.25
	15	86	2.89	1.79	1.10
	30	88	2.72	1.66	1.06
	45	92	....	....	....
4		108	2.59	1.63	.96
	15	120	2.43	1.60	.83
	30	128	2.18	1.54	.64

DECKER PROCESS

Conditions in Digester During Injection and First Part of Cook

Time Hrs.	Min.	Conditions of Acid Temperature of Acid °C.	Analysis of Acid % of SO_2 Total	Free	Comb.	Details of Injecting Digesters Temperature °C. No. 3		No. 5		No. 2	
	0	37	3.46	2.11	1.35	gas	138	liq.	120		
	15	33	3.23	1.92	1.31	"	138	"	123		
	30	32	3.10	1.82	1.28	"	139	"	126		
	45	32	3.07	1.70	1.37	"	139	"	126		
1		34	3.17	1.92	1.25			"	126	liq.	100
	15	39	3.55	2.34	1.21			"	127	"	107
	30	47	3.74	2.59	1.15			"	128	"	114
	45	47	3.84	2.53	1.31			"	128	"	118
2		51	3.78	2.50	1.28			"	129	"	122
	15	52	3.58	2.37	1.21			"	130	"	124
	30	53	3.68	2.43	1.25			gas	131	"	127
	45	55	3.55	2.43	1.12			"	132		
3		57	3.58	2.40	1.18			"	133		
	15	58	3.62	2.43	1.19			"	136		
	30	60	3.65	2.56	1.09			"	138		
	45	62	3.62	2.53	1.09			"	139		
4			3.71	2.59	1.12						
	15	55	3.71	2.59	1.12						
	30	57	3.74	2.62	1.12						
	45	64									
5		69	3.71	2.66	1.05						
	30	72 ½	3.49	2.50	.99						
6		85	3.42	2.50	.92						
	30	90	3.17	2.24	.93						
7		100	2.98	2.14	.84						
	30	116	2.62	1.86	.76						
8		122	2.30	1.76	.54						
	30	126	2.40	1.92	.48						
9		130	2.11	1.73	.38						
13		148									

Silicate of Soda in the Paper Mill

By JAMES G. VAIL, Chemical Director Philadelphia Quartz Company, Philadelphia.

Hardness and smooth finish are the qualities which the paper maker usually associates with silicate of soda. Commercial solutions of suitable composition when added to the beater and precipitated with alum impart these characteristics and give other advantages among which some gain in strength is generally observed. These results can only be secured if the silicate is used with due regard to its chemical and physical properties.

Aside from improving the properties of the paper there are several other purposes for which silicate of soda is useful in the paper mill. A consideration of some of these is worth while from the point of view of illustrating the nature of the material as well as to call attention to the minor uses which may have escaped the notice of some who may find them helpful.

Silicate and Cement

Beginning in the sulphite pulp digester we find silicate of soda as an ingredient of the cement in which the acid-proof lining is set. A reaction between Portland cement and the silicate solution is here employed to give the needed combination of resistance to water and to acid Silicate of soda alone is affected by water and Portland cement alone is affected by acids but the cement which contains both will, when rightly mixed and applied, give excellent service. The speed with which the reaction takes place depends on the composition and concentration of the silicate. Those forms of silicate of soda which contain a large proportion of silica and little alkali, although they are well adapted to be used in the beater, make cements which set too rapidly for this purpose. The best grade has been determined to be one in which the ratio of soda to silica is as 1 to 2.4. This is usually put on the market at a concentration of 52 deg. B. A good cement is made by using two parts of ground quartz of 20 mesh fineness and one part of Portland cement. The silicate solution is diluted with 10% of its weight of water, and mixed with the quartz and cement to a plastic condition. It is necessary to mix small batches as the setting begins in about five minutes. More water will make the cement set faster and less will somewhat extend the time but the most satisfactory resistance is secured from a quick setting mixture.

A slurry of Portland cement will set almost instantly if brought into contact with a high ratio silicate solution such as that used in the beater. This action is often useful in stopping leaks. The cement set in this way is not very strong but will often close the opening while a slower-setting mixture used to reinforce it is making a permanent job. Slicates of ratioes 1:3.25 to 1:4 may be used in this way.

The high ratio silicates are also well adapted for hardening and dust-proofing concrete floors; particularly where these are subjected to heavy wear a treatment with a hot solution diluted enough to enable it to penetrate will be very helpful. The silicate is applied liberally with a large brush or broom to the dry surface of the concrete. Even after it has set, Portland cement will cause the silicate to precipitate to form a hard insoluble material of much the same character as the substance which hardens the paper when the silicate has been precipitated by alum in the beater. For concrete floors that are not wet an additional amount of silicate may be used. That which is not chemically acted on by the cement dries to a strong hard mass of glass like appearance.

Silicate cements can be used for setting tile and as acid resisting material in containers for concentrated mineral acids. It is important to remember that the resistance of silicate cements to water and to acids depends on the liberation of the siliceous part of the solution in place either by something mixed into the cement as in digester lining or by contact with acid after the cement has set by drying. The effective substance in the foregoing uses is not silicate of soda itself but a product of a chemical reaction with silicate of soda.

Silicate as Adhesive

The adhesive uses of silicate depend on its ability to dry rapidly to a strong solid which attaches itself firmly to paper and other surfaces. No chemical change is involved and consequently the dry substance is not entirely insoluble in water though the high ratio solutions are surprisingly difficult to redissolve once they have firmly set. In the paper mill proper, silicate is used for roll capping, label pasting, making splices in supercalendaring and carton sealing. For laminating solid fibre and making corrugated board for shipping containers, silicate is the universal adhesive. Pulp sheets are also laminated with a silicate adhesive to make wall board. For these purposes the more alkaline types should be avoided because they are more soluble and more likely under the influence of moisture to alter colors or adversely affect the rosin sizing.

The unaltered silicate film is strongly grease resisting and is employed on cartons designed to hold oily substances or to support a film of paraffin. Aromatic food products like coffee keep their flavor better in a silicate coated carton than an uncoated one.

As a Boiler Compound

As a boiler compound, a silicate of soda serves to cause a bulky flocculent precipitation of scale forming materials instead of a dense crystalline deposit. This makes it possible to remove the impurities as mud by blowing off the boiler. The reaction is closely comparable to that in the beater except that the silicate is precipitated by lime and magnesia compounds instead of alum. The most soluble forms of silicate are best adapted for this use. A grade of 1:2 ratio is extensively employed.

The amount of water present when silicate of soda reacts with a compound which sets the silica free has a large influence on the physical character of the liberated material. If the silicate is dried in the presence of some inert material like sand and then acted on by a strong acid the liberated silica will be dense and strong. The mass will be similar in texture to concrete. But if the reacting substances come together in the presence of a great quantity of water as in the beater or in the steam boiler, the separated product is finely divided, soft, flocculent and easily suspended in the water. This condition adapts it to be distributed among the fibers of paper and retained. It requires strength and cementing qualities only after the water has been much reduced. If you would visualize what goes on in the beater it is essential to have the same

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Read at T.A.P.P.I. meeting, New York, Sept. 18, 1923.

proportion of water present that is used in practice. If you mix a strong solution of silicate with a strong alum solution a gritty mass quite unsuitable for addition to paper stock will be formed.

In the Beater

Silicate of soda has the property of making clay more fluid when it is suspended in water. Mills making book paper may take advantage of this fact to handle their clay at a much greater density than would otherwise be possible. Where the consistency at which the clay may be handled through pipes or screens is the determining factor it is often possible to put twice as much clay into a gallon of water by the simple expedient of adding a little silicate of soda to the water. The best results are secured by the use of the exact proportion appropriate to the particular clay. This is always small, frequently in the neighborhood of 1%. This silicate when precipitated in the beater helps the retention of clay in the paper, though the amount necessary for making the clay fluid will not be enough to give maximum effects. The precipitate formed by the silicate assists in the retention of clay. In one mill the ash of the paper increased from 6. 1% to 9.2% due to this cause. Other mineral substances including colors are better retained when silicate is used.

Used in the beater, silicate has several points of resemblance to rosin size. It is applied as a liquid which is readily diluted by the water and thus brought into contact with each fibre. Like rosin size it loses its alkaline character under the action of alum and an insoluble neutral substance is formed which is retained by the pulp and influences the character of the finished sheet. Silicate differs from rosin size in that in does not of itself impart additional water resistance to the sheet though cases are on record where the use of silicate increased the retention of rosin and thus appeared to add to the waterproof quality of the paper. It is essential that enough alum be added to precipitate the silicate as otherwise most of it will be lost in the white waters.

The amount of silicate to use depends on the results desired but usually varies between 2 and 8 per cent on the weight of the dry fiber stock. The alum needed for its precipitation varies according to the composition of the silicate used but is usually between 25 and 30 pounds of dry alum per 100 pounds of the silicate solution as added to the beater.

The kinds of paper that may be treated with silicate of soda include almost all the grades where hardness is an asset. Chip board made from old fibre containers contains silicate whether the paper maker adds it or not. It is used as an adhesive in the board and can be made to yield a harder, better chip stock by the simple expedient of precipitating it with alum. The amount required will vary but the beater should be made faintly acid to litmus. The silicate in an average lot of old containers will require about 50 pounds of alum per ton.

In finer grades silicate is used with starch, the retention of which it improves. The starch is heated in a silicate solution till its grains begin to swell, cooled off and put into the beater. The starch and silicate are so closely associated that when the latter is precipitated, the former is carried along. Book papers have been successfully made with silicate and starch sizing without the use of rosin. The silicate treatment makes paper resistant to printers ink even when it is immediately penetrated by water. Silicate and rosin can be used together in those papers where water resistance is essential.

A variety of other materials have been proposed for use with silicate in paper including casein, glue, soaps and Bakelite but none of these have yet become industrially important. A review of the literature of silicate of soda in the paper industry will shortly be forthcoming from the Chemical Department of the Philadelphia Quartz Company.

WAYAGAMACK'S TROPHY

This picture shows the booth of the Wayagamack Pulp & Paper Co. at the Three Rivers Exhibition. It won for the Company a nice silver cup which was presented by the Three Rivers Traction Company for the best exhibit of products manufactured in Three Rivers

JAP PAPER PRODUCTION IN JULY

The paper production in July in Japan amounted to 62,341,000 lbs. and the sales 55,462,000 lbs. Comapred with those of the previous month, there was 887,000 lbs. decrease in production, but 408,000 lbs. increase in sales.

(unit 1,000 lbs.)	Production	Sales
High grade printing	8,628	7,416
Printing	10,363	9,106
News	27,714	25,494
Torinoko	4,105	3,216
Hand-made Japanese paper	1,183	1,157
Match	708	563
Colored	605	642
Wrapping	3,387	2,998
Chinese	702	231
Miscellaneous	4,941	4,634
	62,341	55,462

Compared further with those of the same period of last year, in the sales an increase of about 3 million pounds made, which is 20 per cent. increase. The totals for the last seven months amount to 430,646,760 lbs. in production, and 426,355,025 lbs. in sales, leaving the stock of 14,291,735 lbs.

The Powell River Company announces a new construction programme, which will be undertaken immediately. Twenty-six houses, to cost $100,000, will be erected for accommodation of employees of the company. In addition to the above, improvements to the plant will be undertaken, at a cost of about $13,000.

The Cottrell Electrical Precipitation Process in the Pulp And Paper Industry[1]

P. E. LANDOLT and N. W. SULTZER[*]

The manufacture of pulp and paper from wood is one of the largest basic industries of the United States. Highly perfected as these manufacturing operations are from a mechanical standpoint it is fully recognized that certain improvements in operations would be desirable and certain wastes in material would result in direct savings. It is the purpose of this paper to show wherein certain of these advantages can be realized with the COTTRELL ELECTRICAL PRECIPITATION PROCESSES.

Description of Cottrell Electrical Precipitation Processes

Numerous papers have been published from time to time describing these processes and the theory underlying their operation. No detailed description of the processes will therefore be attempted (at this time) but a brief outline of their general application will be given. These processes are used to remove finely divided suspended particles—whether solid or liquid—from air or gasses, practically independent of the gas temperature and the corrosive nature of the material. For example—metallurgical fume from gases from smelting and refining furnaces; cement dust from gases from rotary kilns used in the manufacture of cement; soot, ash, dust, etc., from gases from boiler plants; acids—sulphuric, hydrochloric, phosphoric, etc., from manufacturing and other operations; tar, oil, etc., from combustible gases of all kinds; and numerous others. The result is that the Cottrell electrical precipitation processes have found a place in many industries, in fact in some they are considered a standard piece of apparatus.

In the past few years great strides have been made in the art of electrical precipitation. The relation between the various constants appearing in electrical precipitation have been thoroughly studied and analyzed with the result that an installation can now be designed and planned in accordance with rational relations and factors. Likewise great improvements have been made in the design and construction of the equipment, doing away entirely with operating difficulties that formerly were experienced. This improvement in design and construction has also resulted in equipment much more economical to construct an operate. The result is that the Cottrell electrcial precipitation processes are now furnished and installed complete on a contract basis with full guarantees as to operation. These facts are exemplified by the numerous successful commercial installations constructed in this manner during the past four or five years.

Application to the Pulp and Paper Industries

During this period of progress in the art of electrical precipitation and extension of the fields of its application, there has been but little real effort made to emphasize the suitability of these processes to the operations involved in the manufacture of pulp and paper. Most of the possible applications in this industry are similar to commercial applications in other industries and have been handled by commercial installations of the Cottrell electrical precipitation processes. It is proposed therefore to describe some of these possible applications that may prove of interest to the pulp and paper manufacturer, referring at the same time to similar operations or problems in other industries for which the Cottrell processes have proved very satisfactory.

Probably the most apparent application for these processes is in plants manufacturing pulp by the soda process. The waste soda liquor from the pulp digesters is first concentrated to about 30 deg. to 40 deg. Baume in vacuum or other forms of evaporators. This liquor is then fed to rotary kilns where the remaining moisture is driven off leaving a black, powdery mass known as black ash which can again be used in the digesters. During this treatment in the kiln a considerable portion of the more finely divided particles is carried along in suspension in the waste gases. By actual measurements in several plants, this loss figured as carbonate, will amount to from 3 to 5 per cent of the kiln output, also figured as carbonate. This loss actually escapes through any form of dust chamber or baffles and is an absolute loss.

The type of Cottrell equipment proposed for the recovery of this loss is very similar to the equipment being used at the present time for fume recovery in metallurgical plants. This is the "plate and wire" type of precipitation which has been generally adopted for this character of problem on account of its economical construction compared with the "pipe" type formerly used. The installed cost of such equipment is of course dependent upon the magnitude of the operation and the volume of gas to be handled. In general however figuring the black ash recoverable at $20 per ton of carbonate and allowing all fixed charges against the installation and all operating charges, the net return on the investment should amount to from 25 per cent to 40 per cent., depending largely upon the magnitude of operations.

Another possible application where the purpose is primarily one of improving plant operation is for the purification or cleaning of the SO_2 gas used in the manufacture of sulphite liquor. These gases may be produced either from the roasting of pyrites or the burning of free sulphur. In the former case there is a possible two-stage treatment, first for the removal of dust from the hot gases and second for the removal of acid mist from the cool gas. To remove the dust the gases may be treated hot—1,000 deg. to 1,200 deg. F.—in a precipitator constructed of brick and steel (or special alloy if necessary to withstand high temperatures). This type of precipitator is in use for removing dust from such gases in chemical plants where pyrites or zinc ores are roasted. The second stage treatment, which will apply also if free sulphur is burned instead of roasting ores, is for the removal of the sulphuric acid mist from the cooled gases. Acid mist has always been one of the easiest materials to precipitate by the Cottrell processes and this treatment is entirely similar to the removal of acid mist from the cooled SO_2 gas in contact acid manufacture. Several such installations have been in successful use for years in some of the contact acid plants and several more are now under construction.

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[1] Read at T.A.P.P.I. meeting, New York, Sept. 18, 1923.

[*] Staff, Research Corporation, New York, N.Y.

Another application is for the cleaning of hat waste gases from boilers, furnaces, kilns, etc., so that these gases can be used for drying operations. The fact that this application is practical is illustrated not only by the use of the processes for cleaning hot SO_2 gas (see above) but also by the fact that the processes are being applied for removing dust, ash, cinders, etc., from stack gases in power plants. The gases in the latter case could readily be used for drying purposes if there were any such need in power plants. Such a need is present in pulp and paper mills and the sensible heat value of such hot gases would represent a very desirable and cheap source of potential heat.

There are numerous other applications of the processes around mills of this character for the removal of dust and other particles from the surrounding air and air drawn in for ventilation purposes. Not only will the clearing of this air result in a better product—for example a paper free from spots after sizing—but working conditions for the employees will be greatly improved.

The above simply presents in a general way the manner in which the Cottrell processes can be applied to the operations in this industry. The possibilities are by no means limited to the applications described but these will give a plant operator a general idea of the use of these processes so that if a possible problem arises he can readily judge whether the Cottrell electrical precipitator is suitable.

Operating Features of Cottrell Processes

Some of the more striking operating features of the Cottrell processes which make them so suitable for operations of the character described herein might well be emphasized: *First,* there is the low resistance to gas flow. Owing to the operation and design of this apparatus practically the only back pressure is the frictional resistance and this, even in a large installation, will seldom exceed 1/8 to 1/4 inch of water. This permits operation with simply stack draft or if a fan is necessary owing to the local flue conditions, a minimum of power is required. Compare this with the back pressure of 6 to 12 inches of water frequently encountered with cloth filters, bags, scrubbers, etc., and the considerable direct saving of power will readily be appreciated. *Second,* the material collected is in a form easily handled and disposed of. If a dust or fume, the material is collected dry and easily prepared for subsequent use or treatment. If a liquid the material collected runs readily from the precipitator and is at the highest possible concentration as it is not diluted with unnecessary water. *Third,* depreciation, repairs and replacements are a minimum. The precipitator can be constructed of practically any kind of material so that provision can be made in its construction to resist the corrosion of any kind of material whether acid or alkaline, hot or cold. *Fourth,* practically any degree of operating efficiency is obtainable depending upon requirements. If necessary complete removal of the suspended particles is obtainable or as is usually found ample—90 to 95 per cent can be obtained. A careful consideration of the above and the fact that the labor requirements are a minimum, space requirements and power generally small, indicate clearly the advantages offered by the Cottrell processes for problems of this character.

No attempt will be made in this article to give any general figures on the installation cost of Cottrell equipment. While the design is largely standardized, nevertheless each specific problem has distinctive features of construction and to generalize is apt to give misleading information. In general, however, it might be stated that the installation cost of Cottrell equipment compares very favorably with other means for handling a similar problem.

Preliminary Tests

As has already been stated, practically every possible application of the Cottrell processes in the pulp and paper industry will correspond closely with some existing installation in some other industry. Therefore preliminary Cottrell tests are seldom necessary to demonstrate the suitability of these processes although if desired such tests can readily be made for nominal cost. Frequently, however, where the purpose of a Cottrell installation is to recover valuable materials, sampling tests are necessary or desirable to determine the amount and nature of the possible recoveries. A method of making such tests has been carefully worked up and the results have been considered satisfactory and conclusive to many large companies—some of whom are users of the Cottrell processes.

From the foregoing it can readily be appreciated that the Cottrell processes have become a standard method of gas treatment and that undoubtedly there are problems in the paper and pulp industry to which they could with advantage be applied. By means of preliminary studies or tests, the results obtainable can be very accurately predicted and the element of risk is eliminated or reduced to a minimum.

TIPS ON CORES

"Tips on Cores" is the title of a booklet which has been recently issued by the Canadian Pulp and Paper Association, Montreal. It is pointed out the core of a newspaper roll is as important as the bobbin on a reel of cotton, and in the course of a year the length of paper cores used by the Canadian newsprint mills, if placed end to end, would make a line 1,400 miles and represent 6,000 tons of valuable merchandise, costing over $1,200,000 to produce. The life of these cores may be prolonged by ordinary care. When the paper core was first introduced it was necessary to use a wooden plug at each end of the roll to prevent the core from collapsing. Its use was not general until the addition of the metal tip. Paper cores with metal tips now weigh only 2 lbs. per foot or 12 lbs. to a 72-inch roll. For freight calculations in comparison with iron cores, this represents a saving of 48 lbs. on a roll of 72-inch newsprint. Some valuable suggestions are offered to the shipping department, and among them are that cores belonging to one mill should not be returned to another because they are not necessarily interchangeable. Cores should also be packed in bundles in order to avoid damage and secure the lowest possible freight rate. When cores are returned to Canadian mills invoices should be sent with bill of lading to facilitate the passing of the customs.

Fibre-Making Processes Inc., announce the removal of their offices from 17th Floor Tower Building to London Guarantee and Accident Building, 360 North Michigan Boulevard, Chicago.

Pulp and Paper Mills' Attitude Toward Educational Opportunities of Men in Pulp and Paper Mills

T. LINSEY CROSSLEY

"Oh, hello! Supe said you were comin' in this shift to sell some school stuff, to learn a feller to make paper out of a book." That's part of what Bill Watermark said when I dropped in on the night shift at the X paper mill. Bill further enlarged on the disagreeable experiences of his soul in the hereafter if he ever had anything to do with learning to make paper out of a book. Bill is a little hardboiled though only thirty-one. He has been making paper fifteen years and all kinds. He said he didn't mind hearing what the idea was, but guessed it wouldn't help much.

"Slack her off a bit, *Yes! Slack*" he yelled to his back tender, "Having trouble with her. Got a new felt on and it's runnin' forward on the back side, and there's a bum deckle strap on the front. That's a special order:—Told Supe when I went off this morning, not to run it till I came on again. Ain't anyone in this mill can run that stuff over that machine but me and the machine tender on that shift knows as much about tag as I do about air planes. When I came in tonight they'd made about three hundred pounds, and I made him leave his fourth hand over-time to clear up the floor. Well, you were going to tell me about those courses?"

It came out that Bill was expecting shortly through an old friend to become assistant superintendent of a small mill with a chequered financial history and later succeed his friend who was leaving. We discussed this project and it became apparent that Bill was nervous as to his general education. We talked about an hour with interruptions, such as that stated above. Eventually he decided to take the full course,—"soup to nuts" he said. He found that our courses would not only complete for him the fundamentals of a general education in mathematics and science, but also furnish very helpful information and instruction on the principles and practice of his own work.

In a big northern news mill I came across the wet room foreman. He'd been out to a dance in the evening and had been in just long enough to be a little grouchy and chilled. He was reading a bulletin sent out by the company describing and giving approval to the courses. I asked him what he thought about it. "I don't think a hell of a lot of it," said he. When asked if he wouldn't like to know more of it before he threw it down so hard, he said, "Gee! do you want to argue about it? That's fine, come on down to the motor room, there's a bench there and it's warmer." So we argued, and he decided he would need to know more. In fact it was evident that he been interested before we had our argument.

These two incidents which are as nearly accurate as memory can make them, show very clearly the attitude of a large number of men in the industry. They know the industry is getting away from the conditions of their earlier experience and they are thinking. First, there is resentment roused by a sense of injustice. This is not improved when they see men who have had little or no practical experience getting good salaries in "white collar" jobs, having authority over seasoned practical men. Second, there is realization that practical experience is not the all and end all of pulp and paper making today.

There are several agencies making use of the courses provided in the text books being published by the joint Executive, but the Pulp and Paper Faculty of the Institute of Industrial and Domestic Arts, Gardenvale, Que., is the only one using the individual canvass method. It is therefore, likely that we have had more opportunity of getting frank views on this question from the men in the mill.

It might be pointed out incidentally, that an outsider, if careful, can get a freer expression of such views.

There are almost as many attitudes as there are individuals.

The limit on one extreme is that the whole thing is a scheme to make the practical man divulge his hard won knowledge for the benefit of the callow university men with "pull" who will get all the gilt-edged jobs.

A cognate case is that of the man who decides to take a course but doesn't want anybody to know it, either, to forestall being pumped or to prevent having fun poked at him.

In one mill the superintendent was such a reactionary that two men who wanted to enter the course didn't want to take any chance of his hearing about it because they might lose their jobs.

In the great majority of cases the attitude is favorable; various reasons for not entering being given by those who would like to study the courses but are obliged to refrain; domestic expenses, sickness or property involvements are chief. Many men think they are too old at thirty to thirty-five. Of course, many are really too old. Lack of confidence keeps many men from entering.

At the other extreme is the man who said he had been waiting six years for just this opportunity and lost no time in signing up for a full course when he had looked over the list of subjects covered.

It is surprising what a lot of men are carrying on other businesses, farms, garages, poultry or groceries. Farming seems to be a sort of paper maker's Beulah-Land. He wants to spend a little time there before he goes to Heaven.

Now a few words as to the attitude of the employer. Similar views are found here, depending in large measure on the personal history of the man in question, because of course, many executives are graduates from the ranks.

A workman was dying, life was ebbing fast, his faithful wife asked if anything could be done for him, "Yes," he said, with a brightening eye, "bring me a piece of pine wth a wood screw driven half into it, and a screwdriver." This was done. The dying man with sudden access of strength raised himself in bed and drove the screw home, then fell back exhausted but with a triumphant smile. "For seven years—I've started screws in wood—I've always wanted to finish the job—now I've done it."

Three girls working in the finishing room, were pasting, wrapping, and packing little bundles of a specialty. Each girl was doing all three operations. The plant engineer advised having the work arranged so that each girl would do only one of the three operations. The president said, "They are girls. I want them to stay girls, not be degraded into machines. We can make dividends other ways."

Read at T.A.P.P.I. meeting, New York, Sept. 18, 1923

A few years ago the idea was that in industrial work a man should be paid only on the basis of what he did. Along this line is a legend of a gentleman appointed to arbitrate in a question of wages in pulp mills. The grinder man's job was under discussion. "And what does he do?" said the arbitrator. "Oh!" said one of the committee, "all he does is to raise the lever, open that pocket, put in a block or two of wood off this pile, and shut it up again." "Then of course he is only unskilled labor." said the arbitrator.

At that valuation most of us are unskilled labor. We pick up a pen or pencil and make more or less intelligible signs on paper, or we press a button under our desk, which brings a young woman who makes the signs for us, while we mess up some English by certain operations with our tongue and vocal chords, complicated by chewing a cigar. She lines them up, operates a machine that spreads them on paper, and we sign them. Why isn't the young lady paid more than the man whose strange sounds she has made effective?

Leaving aside certain building trades operations and the very important, though undervalued matter of loyalty, what is the difference between the $1,500 man and the $5,000 man if we are to be paid for what we do?

From another viewpoint: here's a man who has worked ten years on a job calling for dexterity of hand or foot. He prides himself on his dexterity and nimbleness. He has a good job, well paid. Why should he worry about life? Some stroke of fate makes hand or foot useless. His earning power is gone, and he must start all over again—a long hard road, he probably has no educational basis.

Time-motion studies, ability to handle machinery; the purely physical operations of industry have had their day, they will continue to be large factors in mill work, but they are of secondary importance to the ability to think.

This is especially the case in industries where democracy prevails.

One of these is paper and pulp industry. Thirteen years ago, the manager of a large corporation was seen by the writer about educational development in the pulp and paper industry. "Who would you educate? I want my workmen to do what they are told to do, and not argue about it." It is said the German army failed largely because the soldiers were trained not to think, but merely to obey orders.

The pulp and paper industry has come to the conclusion generally, along with most others, that a man's head is the most valuable asset both to himself and his employer. He can worry along without arms, legs, eyes, ears and even stomach, so long as his head is well stocked. If his head's gone there's nothing to worry about.

Hence, industrial education has developed from the vocational or cook-book form up to the more scientific form wherein the basic principles are elucidated, to produce action by the coupling of cause and effect.

In the pulp and paper industry of America—in other countries also, but we are concerned just now about America—there have been very interesting developments in the application of science owing to the demand for enormously increased production. Up to twenty-five years ago the industry had been developed slowly, handicapped by traditional ideas, a limited literature, and a conservative personnel.

With the introduction of scientific methods the need of co-operation between the scientist and the operative became apparent. A certain resentment, unexpressed in many cases, but picturesquely expressed at times, served to delay or render abortive, the introduction of scientific methods. Indeed the chance of putting over a "bum steer" on the technical man, has been only too tempting at times. For instance; losses well known to men in the mill are not reported. "Let them find it out for themselves. That's their job."

Diplomacy and tact might become subjects of a special course for some of our less experienced technical men, or, better still, a year or two in overalls on shift work. It is gratifying to note a tendency in that direction on the part of university men.

About 20% of the men enrolled in these courses are university men. One of these when he started the course was boss finisher. Shortly afterwards, wanting to see him, I had to go to the time office and I found him rated as unskilled labor helping on the beaters. Others are working as truckmen, broke hustlers or grinder men.

Of the nearly four hundred men now enrolled for these courses under the Institute of Industrial and Domestic Arts 21% are university graduates, 35% have studied in high school, night school or correspondence courses, and 44% went no further than public or grammar school.

The occupations represent about seventy different jobs, some of which are:

4	General Managers
8	Superintendents
5	Assistant Superintendents
7	Boss Machine Tenders
50	Machine tenders
21	Back tenders
52	Other members of machine crews
9	Foremen Finishers
14	Other Finishing Dept. Workers
9	Beater Engineers and Helpers
5	Grinder Room Foremen
7	Grinder Men
8	Cooks and Cook's Helpers
5	Acid Makers
5	Wet-room Foremen
6	Wet machine Tenders
7	Chief Engineers and Assistants
38	Chemists and Laboratory Workers
5	Research Efficiency and Cost Workers
25	Office Workers
19	Machine Shop and Repair Crew Workers

Besides these there are many positions only represented by one or two each.

Among the miscellaneous jobs are one photographer, one forester and two blacksmiths.

Ages are from seventeen to sixty, though there is only one over fifty. He says he has been a beater engineer for forty years and wants to know more about it before he dies.

Following are age percentages

Under 21	8.0%
21 to 25	25.0%
26 to 30	25.0%
31 to 35	22.5%
36 to 40	11.0%
41 to 45	6.5%
over 45	2.0%
	100.0%

It will be noted that 50% of these are between twenty-one and thirty, and that 80% are under thirty-six.

The only successful method of approach has been by individual interviews in the mills. In a few cases these have led to appointments to see men at their homes, but unless the man can be seen first, it may take two or three visits to his house before he can be seen. In most cases we are given a list of likely men by the management and allowed to see them in the mills. In some cases the mills issue notices or bulletins to employees.

Any form of active support by the companies is a great help, in fact, we have had practically no results in some important mills where executive co-operation was lacking. Sometimes fear is expressed that men may be over sold on this idea. This would be as undesirable to us as to anyone. We do not hesitate to tell men that this work requires backbone and perserverance and entails some sacrifice of time and pleasure. But the habit of study soon brings pleasure in reading and satisfaction in mental accomplishment.

The prices of the courses are low, the expense of canvassing is high and the potential value to the industry is great. It is improbable that this school will be profitable to those who have undertaken the financial responsibility; the president and the principal are still serving without compensation from the Institute, but it is certain to be profitable to the industry. We, therefore, have no hesitation in asking your cordial co-operation whenever we may be able to visit your mills.

SETTING THE PACE IN TRAINING FOR INDUSTRY

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To carry out an organized plan of industrial education is a difficult task for a technical society. It is expensive both in the light of financial outlay required and in the necessary expenditure of individual energy. At the same time it is becoming recognized by a few of our more progressive and far-sighted groups of technical men that one of the greatest demands of industry from the present time forward is to be intelligent and more adequately educated workmen. The Technical Association of the Pulp and Paper Industry is one of the pioneer organizations to face this situation squarely and take definite measures to meet it. As a result a fixed policy of vocational education within the industry has been adopted.

The association is preparing a set of five authoritative texts covering the pulp and paper industries from standing timber to packaged product. Every phase of manufacture is considered, discussed, explained. The last three volumes deal definitely with problems of pulp and paper production, while the first two are so written as to offer the workman with a grammar school education full opportunity to lay the necessary groundwork for grasping the more complicated principles entering into the actual manufacture of the products of the industry. The value of the texts to the workmen is increased by the fact that several schools and universities in this country and in Canada are offering their assistance in making it easy for them to master the subject-matter through correspondence courses. And in this connection it is to be noted in one large plant where such a course has been carried out with conspicuous success that the men in the mill have been enthusiastic in their reception of the idea.

It is for these men primarily that the work of preparing these volumes has been done. The total expense of publication has not been less than $40,000. In addition to the money outlay involved many of the members of the association have given liberally of their time in writing and in criticising the contents of the several volumes, the better to insure their absolute accuracy. It is certain that, in addition to performing a real service to workmen now in the industry and to those recruits who are to be added to their ranks, the latter three volumes will have definite value to the members themselves. While this is a secondary consideration, there can be no gainsaying the fact that the crystallized standards and principles set forth therein will enable the members of the association to work more closely together.

The value of the practical man who has acquired the essential technical background underlying his work is infinitely greater than that of the man who works blindly, and such a workman derives a greatly increased pleasure and satisfaction in his occupation. The Technical Association of the Pulp and Paper Industry has adopted a policy that commends itself to the attention of other societies and industries. It constitutes a step long needed and of great value. This effort marks a milestone in the progress of industrial education.

Note: It may be remarked that the Canadian Pulp and Paper Association shares the honor as well as the expense (over $50,000) in connection with this movement, and it is from Gardenvale, Que., that the correspondence course is conducted.—Ed.

THE JOHNS-MANVILLE ASBESTOS FACTORY

One of the important industrial developments of the day is the establishment by the Canadian Johns-Manville Co., Limited, of a plant for the manufacture in Canada of asbestos products. The undertaking is of special interest because it represents a new venture in the manufacture of asbestos products on a large scale in Canada.

The plant is being erected at Asbestos, Quebec, right where the asbestos is being mined. This will help materially in keeping down costs, since freight charges will be eliminated and the savings effected should prove beneficial to the Canadian consumer.

At present two buildings are being constructed. These are one-story concrete and steel structures, 1,000 x 150 feet, and costing approximately $250,000. It is expected they will be completed and ready for use in time to admit of delivery of manufactured products on or before January 1.

The following lines will be turned out: asbestos roofings, shingles, packings, building materials of all kinds, insulation, paper and millboard, brake linings, etc. The initial installation will be sufficient to take care of all Canadian requirements.

The Scandinavian Pulp Agency, Inc., has moved from 50 East 42nd St. to new offices in the Canadian Pacific Building, 342 Madison Ave., New York.

If the Chinese were the first papermakers, that deckle edge Won Lung imparts to the neckbands of the white collar man must be merely a form of ancestor worship.

The Germans claim they are making horseshoes of paper. We have purchased some footgear of the same material from makers who were more secretive.

PULP AND PAPER AUGUST EXPORTS

Details of August pulp and paper exports, as compiled by the Canadian Pulp and Paper Association, as well as for five months of the Dominion's fiscal year, show that increases continue the order of the day in that industry. The value of newsprint exports increased by slightly over $2,000,000 in that month over the corresponding month a year ago, while pulp increased well over $500,000 in value. In tonnage newsprint rose from 1,680,472 cwt. to 2,091,352 cwt., but book paper decreased from 6,684 cwt. to 3,967 cwt. in August.

For five months newsprint rose by slightly more than $8,000,000 in value over the corresponding period in the previous year, while pulp gained close to $4,000,000. In tonnage for that period newsprint rose from 7,694,941 cwt. to 9,353,157 cwt., and pulp of all classes from 6,606,317 cwt. to 7,524,486 cwt.

As compared with the total value exports in the preceding month of July the August total shows an increase of $1,289,450.

Details of the various grades exported are given below:—

	Aug. 1922 Value	Aug. 1923 Value
Paper:—		
Newsprint	$5,933,825	$7,936,505
Book paper	44,053	26,347
Other paper and Mnfg...	576,448	704,287
	$6,554,326	$8,667,139
Pulp:—		
Sulphate	$ 774,643	$ 947,153
Sulphite, Bleached	1,132,910	1,093,120
Sulphite, Unbleached.. ..	852,666	1,199,866
Mechanical..	1,306,728	1,387,991
	$4,076,947	$4,628,130

Exports of pulp and paper in August, 1923, were distributed as follows:—

U. S. A.	$8,137,493	$3,491,773	$11,629,226
U. K.	167,006	702,139	869,145
Others	362,640	434,218	796,858
	$8,667,139	$4,628,130	$13,295,269

Exports of pulpwood in August were 163,411 cords, valued at $1,790,772. This is the second highest figure for the year, the previous highest total being 197,544 cords in June.

The first five months of the current fiscal year have witnessed a large increase in the exports of pulp and paper over those for the corresponding months of 1922; the total value for the five months of this year being $58,686,700, compared with $45,897,590 for last year. This increase in value reflects a considerable increase in actual tonnage, as will be seen from the following table:—

	5 Months 1922 Value	5 Months 1923 Value
Paper:—		
Newsprint	$27,257,382	$35,303,043
Book Paper	99,510	134,117
Other paper and Mnfrs..	2,465,165	3,241,079
	$29,822,057	$38,678,239
Pulp:—		
Sulphate	$ 3,630,106	$ 3,971,737
Sulphite, Bleached	4,708,486	5,684,340
Sulphite, Unbleached	4,200,419	5,559,722
Mechanical	3,536,522	4,792,662
	$16,075,533	$20,008,461

There has also been a noticeable increase in our exports of pulpwood in these five months. During this period there have been exported 700,716 cords of wood valued at $6,873,165. In the corresponding months of 1922 the total was only 411,661 cords, valued at $4,255,333, so that our exports of this raw material this year have increased over last year by 70 per cent.

Friday the 13th was not unlucky for A. G. Hinzke, Sulphite Superintendent of the Port Arthur Division of the Provincial Paper Mills. This was his birthday.

ABITIBI INCREASES ITS GROUNDWOOD PULP

In order to take advantage of the market for groundwood pulp, which at the present time is very good, on account of the dry summer experienced in Southern Ontario, and the Northern United States, a new type of operation was introduced into the groundwood mill at the end of August, the success of which has considerably increased earnings of the Abitibi company.

This operation has resulted in almost a 20 per cent. increase in the output per grinder, while at the same time maintaining a quality of pulp suitable for the seven huge machines turning out twenty-two cars of paper per day, without showing the least reduction in the newsprint output.

The changes in grinder room operating conditions necessary to achieve this result were developed gradually until on September 8th, eighty-four tons of groundwood were lapped on the wet machines. The paper production also has been maintained, four hundred and seventy-seven tons of newsprint per day having been turned out up to September 18th.

"The trade association is proving itself the most potent organized influence in the study of costs in industry and trade."—Herbert Hoover.

GUY TOMBS ADDRESSES PAPER CLUB

The first meeting for the 1923-24 season of the Montreal Paper Club was held on September 18 at the Mount Royal Hotel. Mr. A. L. Dawe presided. The speaker was Mr. Guy Tombs, of Guy Tombs, Limited, who gave his impressions of a recent trip to Europe. Prior to this, there was a brief discussion on the Canadian paper cover trade, especially in relation to American competition.

The President, in introducing the subject, remarked upon what they wanted in Canadian cover papers. Probably the mills could give good reasons for this, but he should be glad to know what they were.

Mr. R. M. Maclean pointed out that Canadian mills were making a bid for this business, and he believed that it would not be long before they captured the chief part. At present Canadian printers were flooded with samples of American covers, and having regard to our restricted market it could not be expected that the Canadian mills could put out as many samples as the American mills.

Mr. H. M. Thorne declared that considering the limitation of the Canadian market, the trade had no reason to complain of either the quality or the variety of Canadian covers on offer.

The President remarked that the average customer of the printer, when given his choice of papers, did not care anything about the origin of the goods neither did he know where they came from.

Mr. J. Home stated that the printers would not put in stocks of cover papers they would buy only what was wanted; the same remarks applied to jobbers. On his recent trip to the Maritime Provinces he had been asked why the Canadian mills did not do consumer advertising, as was done by American companies. The answer was that the Canadian mills were not able to do so having regard to the expense and to the small market.

Mr. P. Burns said the result of his long experience was a conviction that no one would stock cover papers. The business had to be secured through samples and sketches, and the order went to the mill whose sample happened to be favored by the customer. In one instance a stock had been carried for 10 years, and it was almost impossible to move it. Cover papers was a difficult line to handle, and there was very little in it for the jobber.

In his trip to Europe, Mr. Guy Tombs covered a great mileage in a comparatively short period. He told of his impressions of Great Britain, Belgium, Holland and France, dealing briefly with political and industrial conditions in those countries. Naturally, he was chiefly interested in transportation, and some of his remarks dealt with traffic questions and problems in the different places visited. Mr. Tombs inspected the principle ports in the various countries, and gave some details of the facilities for handling the immense traffic.

On his opening remarks the speaker alluded to the paper and printing trades of Great Britain, stating that there had been a marked improvement in the catalogs issued there, these now being on the lines of Canadian work. In posters however, the British producers excelled; their posters being real works of art. Mr. Tombs also referred to the great Empire Exhibition to be held just outside London next year, and in that connection that the Englishman was credited with being slow; this was mere bluff, he was indeed very wide awake, with a commercial policy which looked far ahead. Mr. Guy Tombs told of his visit to various places in London, including the House of Commons, where he heard the debate on Socialism. He gave a humorous account of how he secured admission, after he had been informed that there was no room in the Visitors Gallery.

Alluding to the cotton industry, he said that he used to think that the pulp and paper industry contributed the most handling to transportation companies, but in England the cotton trade surpassed it, and he illustrated his remark by recounting the various details of the haulage of raw cotton until it became a finished product. The railways of England are, he said, now divided into four geographical systems, with the idea of economical and efficient operation, and the plan seemed to be working out well.

From England, Mr. Tombs went to Holland and Belgium, returning to the Old Country via France. A very extensive amount of reconstruction had been carried out, and Ypres was almost completely rebuilt. It was in some instances difficult to realize that the countries had been the scenes of such a tremendous conflict. One thing struck him in Paris—the feeling of almost irritation with which British visitors were received, no doubt the outcome of the political situation.

Mr. Tombs, in summing up, said he was impressed with the British methods of doing business. They were as much interested in trade in far away lands as they were in domestic Commerce. The question of unemployment was a serious one, and it was disheartening to see some of the ex-service men without any permanent work. In Premier Baldwin, Great Britain had one who possessed the general confidence of the people, and who was a fine type of man. Mr. Tombs alluded to the outdoor life in Great Britain, a craving for outdoor exercise which was practically unknown in Canada. He had immensely enjoyed his trip, but after all, real happiness was to be found at home.

GERMAN PAPER EXPORTS INCREASE

The progressive depreciation of the German mark has resulted in a constant decrease in the domestic demand for German paper, says U. S. Vice-Consul N. P. Davis, writing from Berlin late in July for Commerce Reports. The mills accordingly have been compelled to send increasing quantities of their products abroad, so that German paper exports are now considerably greater than in 1913. In one sense, however, and to a small degree, currency depreciation has increased domestic sales. Experience has shown that each new drop in mark exchange is followed by heavy purchasing, both by persons desirous of covering future requirements in anticipation of further price increases and by speculators.

Improvements in mark exchange, on the other hand, cause not only a decrease in foreign orders, but also a lack of domestic purchasing. This was well illustrated during February of the current year, when the mark rose from approximately 50,000 to the dollar to about 20,000, and was artificially held at that figure for some time. Domestic orders for wood pulp and paper fell off at once. Although the prices were reduced by the manufacturers, orders still failed to come in, prospective purchasers preferring to wait in the hope of further reductions. Export orders ceased almost entirely as German export prices, influenced by exchange, had become higher than those of other countries. At one time the German export prices were even below those asked on domestic orders—a hitherto unheard of situation. The results of this condition were decreased production, part time employment, and even, in some cases, complete shutdowns. In several instances manufacturers violated their trade agreements and sold at prices lower than those fixed by the various manufacturers' associations. Indeed, considerable quantities brought less than the actual cost of production.

Conditions Gradually Improving

This condition lasted for about seven weeks, from the first of February until about the first of April. At that time the mark resumed its decline and orders once more began to flow into the mills. At the present time they are generally accepted for delivery in six or eight weeks. Employment has picked up steadily, but the industry as a whole is hardly operating at more than 70 per cent. efficiency, owing to the difficulty of obtaining sufficient coal.

The pulp mills have been compelled to import over 80 per cent. of their raw materials. The principal sources of supply are Czecho-Slovakia and Poland. Production during the half year averaged about 60,000 metric tons monthly. For this output a total of 380,000 cubic meters (11,438,000 cubic feet) of wood were required, of which 310,000 cubic meters (9,331,000 cubic feet) or 130,680 metric tons, were secured from other countries.

This large percentage of imported raw materials, which had to be paid for in foreign currency, caused the manufacturers to base their prices on the dollar exchange rate. Purchasers were required to pay 90 percent. in advance of delivery, not later than the first of the month during which delivery was to be made. Exact statistics are not yet available, but the exportation of pulp has increased steadily since April 1.

The paper and cardboard manufacturers have been more and more compelled to live on their export business, as domestic orders have progressively fallen off. The constantly rising costs of raw materials, coal, freights, and wages, have brought with them a constant advance in paper prices. For some time it has been the practice to fix new prices weekly. Between June 1 and July 1 of the current year average paper prices were increased threefold: a lot costing 100,000 marks on June 1 brought 300,000 on July 1. During the same period the dollar exchange rose from 74,937 marks to 143,368 marks.

Average monthly production during the period under consideration was about 150,000 metric tons, or approximately the same as for 1913. A possible production of 30 per cent. more was prevented by lack of coal and occasional raw material shortages.

While the total paper production was thus approximately the same as in 1913, the output of newsprint was from 20 to 40 per cent. greater than during the same period in 1913. Domestic consumption decreased from 28,000 metric tons per month in 1913 to 10,000 metric tons per month in the first half of 1923. Newsprint produced over and above this amount was exported.

Domestic prices (in marks per 100 kilos) for newsprint since April 1 were: April 1, 140,000; May 1, 155,000; May 15, 161,600; June 1, 225,000; June 15, 275,000; June 25, 298,400; and July 1, 738,000. Advances in prices of other papers were in similar proportion.

Before the war the German paper industry was built up on domestic requirements, and exports, although considerable, were of only secondary importance. Now, however, the reverse is true, and the industry is dependent on its export orders. After the slump during February and March when the mark was artificially held at the rate of 20,000 to 22,000 to the dollar, paper manufacturers looked with dread upon any plan to stabilize the mark, fearing that such an event would ruin their export trade and force wholesale shutdowns.

LAURENTIDE DIRECTORS RE-ELECTED

The annual general meetings of the shareholders of the Laurentide Co. Ltd. was held Sept. 18. In this company, officials, directors and shareholders have been together for so long that the annual meeting has resolved itself into a family gathering at which directors report progress, and receive the commendation of the shareholders for work well done. The actual business of the meeting consisted in the adoption of the annual financial statement, recently published, and the reelection of the retiring board of directors including Sir Vincent Meredith who recently joined the board, filling the vacancy left through the death of the late R. B. Angus.

The board stands as follows: George Chahoon, Jr., president; Charles R. Hosmer, vice-president; Sir Thomas Skinner, Edwin Hanson, F. A. Sabbaton, J. K. L. Ross, George H. Montgomery, K.C.; Sir Lomer Gouin, and Sir Vincent Meredith.

With regard to the outlook of the company for the future, President Chahoon, in moving the adoption of the annual report, stated that the indications are for as good a year as that just passed by the company. He expects a demand for the entire output of the company's mills at a fair price.

Mr. Chahoon, in his remarks to shareholders stated that he had really nothing new to tell them — that it was the same old story from year to year. The company was prospering, and he wished that a greater number of shareholders would come down and see their property for themselves.

He further stated that the two paper machines which were now in operation about two and one-half years, and which were designed by themselves and manufactured by a company which had never before produced machines of this kind, were giving very satisfactory results. The machines were designed with a view to producing 75 tons of newsprint each, per day, or 150 tons in all, and he was very proud to state that their operation exceeded this figure, and that for some time past the machines in question had been producing at the average daily rate of 171 tons. The machines called for a speed of 1,000 feet per minute, or 300 feet faster than the machines which had hitherto been built.

In reply to a question by a shareholder as to the depletion reserve policy of the company, President Chahoon explained that timber limits are written down at the rate of $2 for every cord of wood cut.

The subject of forest fires brought from President Chahoon the expression of a desire to see a law passed whereby companies whose employees are found responsible for a fire should be held responsible for damage caused. He felt, however, that public sentiment at the present time is not strong enough on the subject to bring in such a law. He stated that the forest fires of the past year have been more costly than for the previous ten years, and he sees no prospect of curtailment of these losses until those responsible for causing them realize that the losses incurred are their own, and not merely those of the Government or lumber companies. The Laurentide Company had suffered in company with other concerns having limits limits in the same district, from two serious fires, one of which caused damage estimated at $2,500,000 to $3,000,000, out of which about 80 per cent. might be salvaged.

PULP AND PAPER NEWS

Mr. E. Ouellette, member of the Legislative Assembly for Yamaska has been appointed a member of the Legislative Council for the Province of Quebec. He is vice president and general manager of the Tourville Lumber Mills Ltd., Louisville, P. Q., a Company which this season is taking our large quantities of pulpwood.

The Province of Quebec Government will offer next month by public auction three groups of water powers on the Megiscane River, in the county of Temiscamingue, in proximity to the Transcontinental Railway. The first group is located below the outlet of Lake Failon, at three miles from the Transcontinental, and the gross mininum power is estimated at about 7,600 h.p. The second group is in the township of Dollard, with a minimum gross power said to reach 2,600 h.p. The third group is situated in the same township and the minimum power to be developed is set at 7,000 h.p., the three groups' minimum development reaching about 20,000 h.p. One of the conditions is that the lease, granted for a term of 10 years, is that the lessee undertake to establish one or more pulp mills with a daily output of 100 tons in the vicinity of the water powers. A delay of three years will be granted for the construction and operation of the mills.

The A. P. W. Paper Company, Albany, N. Y., have under consideration plans for the construction of a sulphite plant in Nova Scotia.

Mrs. George Chahoon, Jr. of Grand Mere was third in the contest for the Women's Senior Championship, with a score of 104, after playing a tie with Mrs. Sidney Jones and Mrs. W. H. Burns, who finished with 95 and 102, respectively.

Mr. J. Home, of the Beveridge Supply Company, Limited, Montreal, has returned from a seven weeks' trip to the Maritime Provinces. He reports that business is quiet, owing in a measure to the adverse effect of the Fordney tariff upon some of the basic industries. Competition in the paper trade is keen, American mills making a strong bid for the business offered.

Montreal Tramways, Montreal, Dwight P. Robinson & Co., Consulting Engineers, have just purchased from the Combustion Engineering Corporation Limited, for use in conjunction with 2-1,200 H. P. B. & W. boilers, 2 Self-Contained Type C. Travelling Grate Stokers which will be the largest stokers in Canada, 16 ft. wide, 17 ft. 6 in. long, each capable of burning sufficient coal to develop 300% of the boiler rating or 3,600 H. P. per stoker.

One of the several unique features of these stokers is that the stoker driving mechanism and the forced draft fans with their air ducts are incorporated as part of the stoker, the fans being mounted one on each side of the coal hopper. The fans are direct motor driven. This feature eliminates all air ducts in the boiler setting .

C. Nelson Gain, manager of the Don Valley Paper Co., Toronto, entertained the members of the Young Men's Club of the Toronto Board of Trade recently at his country home Erindale. A most delightful time was spent. In the afternoon there were several games of ball played and the older members disported themselves on the nine hole private golf course of Mr. Gain. In the evening there was a jolly corn roast and the remaining good things, after the wants of the inner man had been satisfied, were auctioned off and the proceeds amounting to $35 went for the Japanese relief fund.

W. H. Sherriff of the Hodge-Sherriff Paper Co., Toronto and H. A. Goldsbrough of the sales staff of the firm, spent the past week on a business trip to Montreal, Three Rivers and other points east.

H. L. Muir, of Brantford, representing the Brantford Stationers, Limited, left this week on an extended business trip through the Maritime provinces.

O. A. Porritt, President of the Lennox Paper Mills, Camden East, Ont., accompanied by Robert Rolland of Montreal, sales manager of the firm, were in Toronto during the past week calling upon the trade. The new company have started manufacturing book, bond, sulphite and envelope papers at Camden East and the plant is now in full operation. The new de-inking process which has been introduced in connection with reclaiming and utilizing waste stock, is reported to be working satisfactorily.

H. B. Donovan, of Toronto, sales manager of the Canada Paper Co., spent the past week in Montreal on business. George C. Winlow, sales manager of Lincoln Mills, Merritton, was also among the callers on the Montreal trade during the past few days.

The sixth annual gathering of the Canadian Paper Trade Association will be held at the Windsor hotel, Montreal, on Tuesday and Wednesday, October 16 and 17. N. L. Martin, of Toronto, secretary of the Association, is busy preparing an interesting and instructive program and a number of timely addresses on trade topics will be delivered.

Among the pulp and paper men who were in Toronto last week on business were John Ebbles, of the American Writing Paper Co., Holyoke, Mass; Mr. Willcox of the Smith Paper Co., Lee, Mass; John Larkin of the Federal Paper Co., Montreal, C. H. MacFarlane, MacFarlane, Son and Hodgson, Montreal; C. Howard Smith, Montreal; Edward Beck, manager of the Canadian Pulp and Paper Association, Montreal, and others.

C. N. Ramsay, of Ritchie and Ramsay, coated paper manufacturers, Toronto, who has been spending the past summer at his cottage at Eastbourne, Lake Simcoe, has returned to Toronto.

Fred W. Halls Paper Co., Toronto, have sent out to the trade a neat folder setting forth the merits of Durable Folder Superfine, a coated book paper, uniform in color and finish, which is handled by the firm in several weights and sizes. The folder is entitled "One Way to Get Business."

The Howard Smith Paper Co., Montreal, have issued an attractive leaflet featuring Royal Record for business stationery, legal documents, stock certificates, etc.

The Spruce Falls Co., Kapuskasing, Ont., of which E. J. Jones is general manager, are building thirty-two houses this season for their employees. All dwellings are of the four room type, with modern conveniences and neat in designg. They are clap board, half storey and shingled above. The average cost of the houses is $3,000 each. The company expect to get in between 50,000 and 60,000 cords of pulp wood during the coming season and approximately half the quantity will be obtained from settlers.

The Continental Wood Products Co., of Elsas, Ont., have 600 men in the woods at the present time and will erect at Elsas a very large kraft pulp mill. Herman Elsas President of the company, and the chief engineer of the organization, are now abroad getting all available data on construction and equipment.

R. R. McKay, of Toronto, was the successful tenderer on some twenty-five square miles of pine and spruce in Cassels township, which is located on the T. and N. O. railway north of North Bay. The prices received by the Department of Lands and Forests of Ontario were very high, the red and white pine receiving $20.65 per M feet; saw timber, $13; basswood $12; railway ties 55 cents each; spruce pulp wood $2.85 and other pulp wood $1.65.

L. L. Brown, of Victoria, B. C., Lumber Commissioner, has arrived in Toronto from the west and will spend the next few weeks calling upon the trade in the east. He reports that the mills at the Coast are all busy filling export orders.

T. M. Kinsman, of Toronto, has been appointed business and circulation manager of the Canadian Masonic News, 33 Richmond St. west, Toronto, which has made its appearance. Gordon H. Stewart is the publisher and D. A. Lane editor of the new publication.

NEW BRUNSWICK NEWS

The Nashwaak Pulp and Paper Company's pulp mill at St. John, N. B., has been closed indefinitely. The announcement came rather suddenly. No reason is assigned for the suspension of operations, but the supposition is that the recent increases in rates on pulp and paper companies by the Workman's Compensation Board of the province of New Brunswick, are responsible. The order to close is said to have emanated from the head office of the parent concern, Oxford Paper Company. The general manager of the Nashwaak Pulp and Paper Company, H. E. Beedy, is vice-president of the New Brunswick Lumbermen's Association and in his hands is the fight of the pulp and paper interests against the compensation board increases.

The case of the Bathurst Company versus the New Brunswick Workman's Compensation Board is again before the courts of New Brunswick on appeal. The case will be taken up at the current term of the provincial supreme court.

R. W. McLellan, of Fredericton, who was appointed a member of the royal commission formed by the federal Government to investigate the pulpwood situation and report back to the Government, on the necessity or otherwise of an embargo on exportation of Canadian pulpwood to the United States, has gone to Ottawa. The preliminary meetings of the board will be held at the capital, and the first hearing is scheduled for Halifax, N. S. on October 2. Mr. McLellan says he has no statement to make as his attitude will be governed by the evidence adduced before the commission.

The St. George Pulp and Paper Company, operating a pulp mill at St. George, N. B. lost a cargo of pulp en route by schooner from the mill at St. George to the paper mill of the company of Norwalk, Conn. The St. George Pulp and Paper Company is now controlled by the New York World Company. The bulk of the pulp is shipped to Norwalk by schooner, from the St. George pulp mill.

At the hearings of the royal commission to investigate the pulpwood question, at least those hearings that will be held in the maritime provinces, a large number of witnesses will likely be called. Indications are that the commission will be about a year on duty.

The Dept. of Lands and Forests of Quebec is engaged on a scheme for the establishment of bureaux of forest research in various parts of the province. The schools will serve somewhat the same functions as the demonstration farms, with the exception that their activities will be confined to trees only. A sum of $25,000 has been set aside by the Government for the furtherance of the scheme.

One of the sessions of the fall meeting of the Committee on Paper Drying, to be held at Appleton, Wis., Oct. 26 and 27, will be devoted to the subject of paper drying and the drying code. Under the chairmanship of S. B. Jones, Pejepscot Paper Company, conspicuous work has been done by the Committee during the past year. A paper drying code very largely has been perfected and marked interest has been aroused among paper manufacturers and plant engineers in determining the efficiency of paper drying and in finding means of improving it. A number of exhaustive tests have been made and in many mills records are being kept of operating results.

KAMINISTIQUIA PULP PAYS BONDHOLDERS

A final distribution of 9.15 per cent is to be made to the bondholders of the Kaministiquia Pulp and Paper Co. This, with the first payment of 20 per cent made in January last, brings the total payments up to 29.15 per cent, or $145,750 on the $500,000 issue of bonds.

The Capital Trust Company are the trustees for the bondholders and make the following statement of receipts and disbursements:

Receipts	
Proceeds of sale of property, etc., less $35,000 held pending outcome of suit with Port Arthur	$92,348
Proceeds from sale of Hele Township Limits, Ojibway stock	54,966
Balance received from Supreme Court	26,201
Interests accrued to Aug. 1, 1923	602
Disbursements	
Legal fees and disbursements	$14,759
Ground rent and fire protection	961
Remuneration of trustees	8,670
Sundry contingent expenses	2,433
Payment to bondholders	100,000
Balance for distribution	45,750

The Kaministiquia Pulp and Paper Company was organized in 1920 and held leasehold property at Port Arthur, a license to cut timber on Magnet Point limit, and an interest in a license to cut timber in Hele Township in the district of Thunder Bay. From the sale of bonds a mill was erected, but before completion it was decided that more funds would be needed. An unsuccessful attempt was made to raise sufficient capital and about the same time the price of groundwood pulp dropped to such an extent that the limited output of the mill did not permit of it being operated at a profit.

A judgment was secured under the Mechanics Lien Act by C. D. Howe & Co., for approximably $125,000. The sale of the property brought $200,000 and the limits a further $55,000, and on an appeal the Courts reduced the claims of C. D. Howe & Co., to $60,000.

Woodlands Section

POLITICS AND PULP

From the conversationists' point of view the appointment of the Royal Commission, to enquire into Canada's pulpwood resources, was not only disappointing, but it also brings home the fact that politics is playing too prominent a part in the administration of our forests. All foresters, lumbermen, pulp and paper mill operators are agreed, that our forest resources are in a dangerous condition as far as the limited supply with an unlimited competition is concerned. Why appoint a Royal Commission? The work to be done by the Commission belongs to the Departments of Forestry of the Dominion and the various provinces. The Department of Forestry is in a better position to verify the too well-known facts as to our remaining, pulpwood resources. Again, it is conceded by all who are interested in the conservation of our forests, that a forest survey is absolutely necessary. The excuse for not undertaking that work was the high cost and the necessity of governmental retrenchment. This body of men, taken from various walks of life and none of them intimately connected with forests and forest management with the exception of the secretary of the Commission, are doing well if they bring in a report inside of two years. The cost of their report will be approximately between two and three hundred thousand dollars. This amount, spent on an intelligent forest survey would have had tangible results, whereas the ultimate outcome of the activity of the Royal Commission is doubtful. The Canadian taxpayer has to foot the bill of these political plums. Why appoint a Royal Commission? Is it for the purpose of hood-winking the public and catching votes? The arguments put forth by Prime Minister Taschereau of the Province of Quebec are, to use a polite term "specious." The Prime Minister is quoted as follows by the Literary Digest of August 25. "The Privy Council decided that the Federal Government had no right to fix the price of newsprint, since that was a matter of property and civil rights." Would this not also be a matter of property and civil rights? There happens to be a vast difference between "newsprint, a commodity, and the Canadian nation's raw forest resources.

The Prime Minister forgets that on the conservation of our forest resources depends our whole national welfare; that on the conservation of our forest resources depends our national independence; that the Fordney-McCumber tariff was put in operation with the sole purpose of protecting United States stock raising and agriculture in general; that the Dominion of Canada, in order to keep her working men and in order to keep the influx of population, must keep her forests productive and that highly industrialized provinces like Quebec and Eastern Ontario can not afford to export pulpwood; they must feed a large industrial population. With the Canadian people the embargo on pulpwood is not a question of retaliation for the Fordney-McCumber tariff, it is a question of national life or death. During the month of June the export of raw pulpwood increased a hundred and fifty per cent. By the time the Royal Commission will bring in its report the country will have traded between six and seven millions of cords of pulpwood for a "Mess of Pottage." — Fred Brown, Fort Frances, Ontario.

U.S. PAPER COMMENDS CANADIAN ACTION

In the course of a reply to a communication from Dr. A. P. Baker, Secretary of the American Paper and Pulp Association, the *Manufacturer's Record* (Baltimore, Md) makes the following comment:

"We take it for granted that Canada has a perfect right to pass any law for the protection of its own interests. Indeed, Mr. Baker states that since the war there has been "evident in Canada a marked nationalistic development and there is quite a party insisting that Canadian raw materials must be manufactured in Canada." We commend Canada for taking that position. It is exactly the position which for forty years the *Manufacturers Record* has been taking in behalf of the development of this country. We have insisted that the exportation of raw materials from any part of this country deprives the section shipping these raw materials of the opportunity for creating home industries for the full utilization of these materials.

"No country on earth can get rich shipping raw materials. Raw materials are simply the basis for the employment of labor, and labor creates the wealth which comes out of the use of raw materials. Wherever raw materials can be utilized at home, whether that be the United States or Canada, whether, so far as this country is concerned, it be the utilization in Alabama for instance of coal and ore, carrying the raw materials through to the finished product; whether it be in Louisiana in the utilization of gas or oils and sulphur, the *Manufacturer's Record* is heartily in sympathy with the policy of using these raw materials at home to as great an extent as possible. It does not believe that we can by legislation prevent the shipment of raw materials from one state to another. That would be unwise under our form of government. Canada has a perfect right to utilize its raw materials at home if it decides to do so. We have a perfect right to utilize our raw materials of all kinds at home for the production of manufactured goods, preferring to ship the finished product into Canada or other countries rather than send the raw materials abroad. It would be better, for instance, for this country if we could turn all of our wheat into flour and ship the flour rather than the wheat, but that point has not yet been reached.

Canada not Proved Wrong

"It is quite true that there is an international significance to what Canada is planning to do, and we are not at all surprised that Secretary Hughes has communicated with the Canadian Premier on the subject. But that does not by any means whatever prove that we are wholly right and Canada is wholly wrong."

Money may always be a beautiful thing. It is we who make it grimy.—J. M. Barrie.

CANADA HAS CLEAR RIGHT TO EMBARGO

A careful analysis of the rights of Canada in the matter of placing an embargo on exports of raw pulp wood has been made by the *Financial Times*, Montreal. The following points are worth remembering.

The statements made across the border that the embargo proposal was a deep-laid plan of Canadian paper manufacturers to embarrass the American industry and give Canada virtual control of the situation is most certainly without foundation. It is not a "scheme of the paper makers" and no Canadian newsprint manufacturers have taken a stand in the matter. The action has come from an altogether different source, having been fostered largely by one leading conservationist, Frank J. D. Barnjum, who is actuated solely by patriotic motives.

Keen U. S. Interest

Meantime, pulp and paper consumers and manufacturers in the United States are greatly elated over the possibility of the Canadian Pulpwood embargo proposal being postponed for an indefinite period. The seriousness of the effect of the proposed legislation upon the American industry has not been minimized across the border. Despite all efforts on the part of American consumers of pulpwood to find some ground of contention by which to oppose the prospective legislation they have been forced to admit that Canada would be entirely within their own rights in emplacing an embargo upon pulpwood if she so desires. The fact that the matter will be turned over for investigation by Royal Commission appointed by the Canadian Government is the one ray of hope held out to American consumers, and the latter are now planning an expedition to Ottawa to discuss the situation "at headquarters."

Diplomatists Worried

Diplomatic Washington has been greatly upset over the prospect. The best legal talent at the American Capitol has been brought into study of the situation. Canada's legal grounds for the proposed embargo were completely analyzed and found flawless. Attention was then turned to the possibilities of retaliatory legislation on the part of the United States. Here again it was found that Canada stands clear in the matter. Hope was expressed that 'no much action will be taken as is implied in the authority granted the governor-general to impose an embargo.'

Canada Has Suffered

One of the most interesting aspects of the case in connection with the possibilities of retaliation on the part of the United States is the situation which developed through the American tariff legislation of a couple of years ago. The famous Fordney tariff and the various amendments which have been made thereto since the law was first passed delivered a serious blow to Canadian commerce with the United States. Canada's grain exports — mainly wheat — to that country were cut down very considerably through the new tariffs and new markets had to be discovered as a means of outlet for the large exportable surplus of Canadian grain. The same thing applies to cattle as well as a number of other agricultural and commercial products.

Needed Wood and Paper

At the time, it will be remembered the American Government decided not to place a tariff against the products of Canada's forests. This was largely because of the fact that these products were most vitally needed has continued to follow her line of expansion. New markets have been developed in various parts of the world which are tending to offset to some extent the loss in the United States. Despite these hardships, Canada did not consider seriously the bringing into effect of retaliatory lagislation.

Patriotic Measure

The pulpwood embargo proposal has not been unearthed as a means of retaliation on the above account. It is simply a patriotic measure fostered largely by a single Canadian who has worked diligently during the past few years to bring about a situation which would assure the perpetuation of Canada's forest resources and the continued future success of the pulp and paper industry in the Dominion — an industry which is fast growing to a place of leadership in this country's industrial life. On this account retaliation by the United States has not been seriously considered inasmuch as it is not believed that the American legislators could fairly adopt such means of attack or reprisal where no just cause exists.

In view of this situation Canada cannot fairly be accused of an effort to monopolize the paper- making industry of the North American continent, as has been suggested in despatches from the United States appearing in the Canada press. Such is far from the intention despite whatever accusations may be made by American importers of Canadian pulpwood.

AMERICAN MANUFAFCTURERS LOSE KRAFT PAPER DUMPING CASE

Compliments don't tickle the dead! The statement that Norwegian kraft, sold in the United States for less than the same bought at home, was inferior to the domestic article is little solace to the mill injured or shut down by this competition.

The Treasury Department has found that there was no dumping of Norwegian kraft paper during the early months of 1922, after an exhaustive investigation of the whole Norwegian paper situation both here and abroad. It is apparent that the decision was rendered on the basis of the importers' admission that the kraft paper they were importing was not up to the standard of the American made kraft, though no official announcement is made by the department authorities. The American paper manfacturers, through the American Paper and Pulp Association, showed the great damage done to the American paper market by the importation of great quantities of Norwegian and other northern European kraft paper, in the loss of business sustained through such importations. It was shown that the foreign paper was brought in and offered at prices below the American cost of manufacture. The importers who protested against the ruling that there had been dumping laid great stress on their statement that Norwegian kraft was not up to the standard of American kraft, and that therefore the American manufacturer was not injured by competition of an inferior article. The case was heard before McKenzie Moss, Assistant Secretary of the Treasury, who has ruled that the American manufacturer has not been injured by Norwegian competition, though it was shown by governmental agents that the prices in the United States for Norwegian kraft were 17 percent below the prices for the same paper in Norway.

In speaking on the question of quality in the hearing before Judge Moss, counsel for the importers made this statement, referring to American manufacturers: "Then places are higher and their merchandise brings a better price because it is better in quality and they take better care of their customers."

UNITED STATES NOTES

The fifth annual fall business conference of the American Paper & Pulp Association will be held at the Drake Hotel, Chicago, an announcement just given out by Dr Hugh P. Baker, executive Secretary of the Association states. A joint conference with the National Paper Trade Association will be held October 11. Dr Baker predicts that the gathering will be one of the most important and largely attended in the history of the industry. A feature will be discussion of the proposed Canadian pulpwood embargo and its effect on the practice of forestry in the United States and Canada. The program also includes educational motion pictures and other features.

After a tie up of two months because of a strike, the plants of the American Writing Paper Company at Holyoke are again in operation and from orders on hand the indications are that the corporation will break even for the month of September even with curtailed operations. There was a deficit in July and August. Plans for the rehabilitation of the company are being formed, and while the details are not yet perfected, it is probable that the working capital will be increased $1,000,000 and possibly more.

The rapid rate of cutting forest trees in New York State and the need of concerted effort to keep the gypsy moth from gaining a foothold west of the Hudson River were among the important matters considered at a hearing at Albany last Friday by the United States Senate special committee on reforestation. Senator George H. Moses of New Hampshire presided, and committee members present included Senators Fletcher of Florida, Couzens of Michigan, McNary of Oregon and Harrison of Mississippi. The statement was made by State Conservation Commissioner MacDonald that timber in New York State is being cut twenty times as fast as it is grown.

According to a director, the United Paper Board Company is operating all of its mills, and bookings on hand indicate strongly that the company in the current fiscal year will show an improvement over the good showing made in the last year ended May 27, last. Last year's net earnings amounted to $346,275, equal after preferred dividends, to $2.65 a share earned on the common stock. With the increase in operations the company has been able to liquidate all debts and reduce overhead expenses, with inventories and other current assets larger. The company's earnings in the first two months of the present fiscal year exceeded $150,000, subject to depreciation.

Following months of litigation the Burnside Tissue Mills have again passed into the hands of Thomas F. Garvan of Hartford, Conn., who was their original owner. Mr. Garvan does not intend to run the mills himself but is negotiating with several parties for the sale of the property.

Due to the bursting of a panstock at their Grand Falls plant, several grinders of the Ste. Croix Paper Mills were shut down. Repairs are being rapidly made and production resumed.

Mr. L. S. Tuck, formerly on the engineering staff of Price Brothers & Co., has resigned a similar position with the Pejepscot Paper Co. to take up work with the St. Lawrence Paper Mills at Three Rivers.

BOX AND PAPER MAKERS ADOPT 25x40

A most important plan of co-operation between the national box manufacturers and the manufacturers of glazed and fancy papers has been worked out for the simplification of the distribution to the box manufacturers of the product of the glazed paper mills. Still further steps toward the accomplishment are under consideration, with the result that there has been an elimination of opportunities of differences between buyer and seller.

The first step was the adoption by the National Paper Box Manufacturers Association and the Glazed and Fancy Paper Manufacturers Association of a basic size of 25x40 (1,000 square inches) for pricing and billing glazed and fancy papers for the box industry.

The Glazed and Fancy Paper Manufacturers Association, however, through its Secretary, Jacob Erichsen, has made a further suggestion on the sale of paper in rolls, which is now under consideration by the box manufacturers. While all paper sold by a member of the association is sold under his guaranty that the quantity is as represented, two rolls containing the same number of square inches may, owing to a negligible difference in the thickness of the paper, seem to be of different sizes. The customer naturally questions the content of the rolls of different diameter. Mr. Erichsen's suggestion, therefore, is that the box manufacturers work out some device by which the number of inches in the rolls may be automatically measured, so that a simple check of quantity delivered may be obtained for tallying of paper received against the paper manufacturer's invoices.

The question is of minor importance, but the adjustment of such minor differences in a spirit of friendliness between the two associations, is a notable evidence of the spirit of co-operation being fostered between different groups of the paper industry.

UNIVERSITY OF MICHIGAN DEVELOPING COURSES ON PULP AND PAPER

In an announcement of the courses in chemical engineering, issued by the University of Michigan, mention is made of specialized courses in pulp and paper manufacture for graduate students, that are being developed.

The department of chemical engineering has at its head Professor A. H. White, with whom is associated R. A. Hayward, formerly assistant manager of Newton Falls Paper Company.

The pulp and paper group of graduate courses will contain options from the under-graduate course in pulp and paper manufacture and the courses in chemical engineering machinery; from courses in electrical engineering, mechanical engineering, hydraulics, civil engineering and economics. A copy of the announcement may be obtained by addressing the University at Ann Arbor, Mich.

THE JAPANESE DISASTER AND THE JAPANESE PAPER INDUSTRY

BY F. T. HARRIS

Paper and pulp manufacturers in the United States and Canada are naturally interested in the effect of the catastrophe in Japan on the paper industry of that country. It will be some time before information is received here which will be specific enough to enable an accurate picture of the situation to be constructed, so until then a general survey of the Japanese paper industry as it was before the disaster is all that is available.

The two largest paper manufacturing companies in Japan are the Oji Paper Manufacturing Company, Ltd., and the Fuji Paper Mill Company, and are about equal in size. These two companies produce about 60 per cent. of all the paper made in Japan.

One of the mills of the Oji Company is located within a few miles of Tokyo, the heart of the devastated area, others within 100 miles, and the balance not over 250 miles from Tokio. The Oji Company is the oldest joint stock company in Japan, and was organized in 1872 at Oji, in the suburbs of Tokyo. It is the second oldest "foreign" paper company in Japan. When the company began operation, foreign experts were engaged to teach the natives the intricacies of paper making. The last of these experts completed their terms in 1877, and since then the company has never required Europeans to help it manufacture paper.

News print paper is the chief product of the Oji Company, while book paper, postcard, cigarette, celluloid, wrapping and match papers are the other papers made by it. The president and managing director, Ginjiro Fujihara, with a business delegation from Japan, visited the United States in November and December, 1921, and then left for Europe for a tour of industrial centers. He visited several Canadian paper mills in April, 1922.

The Fuji Company was founded in 1887, its first plant being at the base of Mt. Fuji. Four of its present mills are in Suruga Province, within 70 miles of Tokoyo, a few in neighboring provinces, and one in Osaka City, between 200 and about 250 miles from Tokyo.

From 1872, when the first foreign paper mill was established in Japan, construction of other mills gradually followed, and the industry experienced the normal expansion which is characteristic of new industries in the Orient. The Chino-Japanese War in 1894-1895 marked the beginning of a great forward movement in the industry, and all the paper manufacturing companies from that time have continuously made additions to existing plants and equipment and have established new mills.

In 1917 and 1918, the height of expansion was reached. In 1922, the industry experienced such a slump that several paper companies went into bankruptcy and others were forced to suspend operations. This was due to the inability of the Japanese paper manufacturers to hold their own against European and American competition. Export trade in paper shrank to one-fifth of its previous volume and even their domestic market to some extent was lost by the Japanese, in spite of a high protective tariff.

Imports into Japan consist of art paper, colored paper, match paper, wrapping, and straw board, and come from the North American Continent, Germany, France and the Scandinavian countries.

Japan makes about 275,000 tons of all grades of paper annually, and consumes nearly 290,000 tons, or seven and one half pounds per capita. In the United States this year there will be consumed between 45 and 50 pound per capita of news print paper alone. The Paper Mill.

THE PAPER MILLS OF BRITAIN

As indicating the progress made during the past 60 years, and the present capacity for production in the United Kingdom paper-making industry, the following statement by H. M. Trade Commissioner F. W. Field, at Toronto, may be of interest. In 1861 the British output of all grades of paper was estimated at 100,000 tons per annum. The capacity at the present time is approximately 1,250,000 tons per annum, and covers many grades of paper ranging from the cheapest classes of wrapping paper to the costly sheets of hand-made rag papers.

There are at the present time 290 paper and card board mills working in the United Kingdom, and the number of workers employed is approximately 61,000.

The increased cost of different qualities of paper compared with pre-war values varies to some extent. For instance, the cost of tub sized papers at the present day ranges between 75 per cent. to 100 per cent. over pre-war level, wrapping papers are about 100 per cent. and newsprint 100 per cent. to 125 per cent. dearer.

As is generally known, certain United Kingdom mills, especially the Scottish mills, are noted for their fine printings and writings made from esparto grass. This is the only country which has so far found a process for using satisfactorily this class of raw material, most other paper-making countries having experimented, but the results obtained have not been too successful up to the present.

In the past few years great strides have been made in the production of newsprint and other cheap grades of printing paper. A number of new machines have been laid down, and as a result output has been considerably increased, enabling United Kingdom mills successfully to compete in Empire and foreign markets. For these classes a new mill is now being erected and two machines will be installed, which will give a weekly output of 800 tons. It is understood that additional machines will be installed at a later date.

Two new mills were erected during the past 18 months for the manufacture of photographic base paper. Previous to the war the production of this class of paper was almost entirely in the hands of Germany. The two firms owning these mills have recently amalgamated, and it is therefore, hoped that with their combined interests they will be in an even better position to meet foreign competition.

Certain United Kingdom wrapping paper makers who have specialised in the manufacture of kraft paper are now in a position, after a great deal of experimental work, to compete with the imported article as they have not only improved their quality but reduced their cost of production.

In order to assist the United Kingdom paper-making industry the Paper Makers' Association of Great Britain and Ireland formed a technical section two years ago which has investigated and reported on various methods of production and has carried out experiments in connection with the utilisation of new raw materials for paper making.

Whenever we try to give happiness to somebody else, we can't help keeping some of it for ourselves.

The Markets

CANADIAN TRADE CONDITIONS

Montreal, September 25. — After a period of dullness, the tide seems to have turned in the local paper trade. The recovery is nothing to boast about, but it is hoped that it marks the beginning of considerably more activity. There is a more optimistic feeling prevalent — may it be justified! A little more snap to the printing section would be a wonderful stimulant to the paper trade. Preparations are now being made for the Christmas season, and this no doubt is responsible for a part of the larger volume of orders now passing. Practically all branches have shared in the improvement.

The important part played by forest products in the export trade of Canada is emphasized by the returns for August. A comparison of the total figures for that month and for the corresponding period in 1922 shows a gain in exports of $6,635,000 of which forest products constituted the largest of the principal groups under which our foreign trade is classified, exceeding that of agriculture.

Figures of the imports during August of cover papers, stationery, blotting paper, book and printing paper, bonds and ledgers and envelope paper, envelopes and boards indicate that Ontario was by far the largest buyer of goods from other countries. In papeteries, stationery and blotting paper, customers in Ontario took half the imports, in book and printing papers $27,000 out of $40,000, and in bonds and ledgers $15,000 out of $19,000. Ontario was also the chief purchaser of bristol boards and blanks not pasted or coated and mill board and binders' board coated, while Saskatchewan took almost the entire supply of bristol board and blanks pasted or coated. Cardboard and other boards not pasted or coated totalled $10,520 in value of which Ontario bought $9,279.

The strike of the press men in New York, now settled, affected for a short time the shipping of Canadian newsprint. Except for this interruption, the mills are working very fully, with every prospect of this condition continuing for some time. Opinions are divided as to the policy of advancing the price next year, some fearing that higher values would result in a diminished demand. Our mills have hitherto adopted a cautious attitude, and are not likely to take a course which would prejudicially affect production.

In the pulp division, groundwood still commands a ready sale at very firm prices. There has been little alleviation in the water conditions on the other side of the line, and this is keeping the market in a strong position. The recent drop in the price of bleached sulphite has stimulated the demand a little, but it is not as satisfactory as it might be.

Reports received in Montreal are to the effect that the woods operations of the pulp and paper companies in the Province of Quebec will be on a very large scale. Although the cost will be increased the companies have decided that it would be a good policy to cut extensively, and will do everything to get the utmost out of the burnt over areas. Besides that the American concerns who have Canadian connections are out to take a very big supply from our limits — a matter of precaution against the possibility of legislation putting an embargo on the export of the wood.

Ontario Market Notes

Business in the paper line continues fair and there has been an improvement in some branches. Newsprint remains strong and all the mills are busy, some of them breaking records in production.

Prices are firm on all ranges and during the past week there was an advance of half a cent on coated papers, the quotations now prevailing to jobbers being No. 1 coated 14½ cents, No. 2, 13½; No. 3, 12¾ and No. 1 coated litho, 14½. The advance is attributed to the increase in the figure for casein, which, during the past few months, has jumped about 15 cents a pound, and to other augmented overhead expenses. There is also some talk heard of a jump on book papers but nothing has materialized as yet. On the other hand, there has been a reduction of about 10 per cent. on the average on gummed flat papers owing, it is said, to English competition.

Some jobbers, in reviewing conditions, state that the first eight months of this year have shown a considerable gain in turn-over from the corresponding period of last year, the increases varying from 10 per cent. to 20 per cent. Specialty mills report a decided improvement during the last two weeks and are hopeful that the present encouraging outlook will continue.

Business in general in the paper line continues to be characterized by small individual size, the volume coming from increased numbers of orders. Increasing encouragement is justified, however, by the improved mental state of business men in general. The spread of a quiet confidence in trade for the remainder of 1923 is tending to obliterate the uncertainty, scepticism and, to a less extent, discouragement in some quarters, which obtained more or less during the midsummer months.

There was an important meeting during the past week in Toronto, of the manufacturers of fine papers and the Mills Relation Committee of the Canadian Paper Trade Association when trade extension and other matters were taken up. While the mills are not rushed by any means considerable export business is being done and the outlook is regarded as promising. Several trade matters of interest were discussed.

Paper box plants are getting busier and it would not be surprising to see an increase on all kinds of board $10 per ton in the near future which will restore prices to the level of July last when a reduction of ten dollars went into effect on every line.

The groundwood pulp market is active and the demand good. Many mills have entered the arena for supplies, and the figure prevailing is now $45 per ton. Low water conditions have resulted in the advance, many grinders on the other side of the line being shut down. In other grades of pulp prices are unchanged and the number of sales is reported as fair. Kraft pulp is in moderate requisition and the figure remains around $75 at the mill. Kraft paper is being marketed in fair quantities with prices unchanged.

NEW YORK MARKETS

New York, September 22—(Special Correspondence) There have been several developments this week which are likely to have important bearing on the paper industry Probably the leading of these is the strike of newspaper pressmen in New York which started last Monday night and which has held up the publishing of daily papers in this city since. The pressmen walked out in surprise to their employers, and no Tuesday morning papers appeared in New York. On the day following the morning dailies combined and printed an eight page paper without the usual advertisements and in an effort to give the public the news, and the afternoon papers did the same. Indications are that the strike will end in the very near future; in fact; by the time this correspondence is read by subscribers of the Pulp and Paper Magazine the newspapers in New York will probably be publishing their normal issues again, since everything points to an early settlement of the strike.

Obviously the shutdown of local newspapers has diminished consumption of newsprint to no little extent. Of course, New York publishers use but a small percentage of the entire country's consumption of print paper, but the almost total elimination of this big city with its 17 or 18 daily newspapers means quite a hole in newsprint consumption, particularly as the metropolitan dailies are among the largest circulated papers in the country. Should the strike of pressmen last an appreciable length of time there is no doubt the effect on the print paper market would be very pronounced.

Another development of importance is the ruling of the U. S. Treasury Department that kraft wrapping paper is not being "dumped" into this country by Norwegian manufacturers, as reported last week. This ruling likely will lead to additional heavy importations of kraft wrapping paper from Norway and other European sources. The amounts of such paper that have been coming into the United States in recent months have been tremendous, comparatively speaking, and the movement toward this country will probably keep up now that there is no danger of the Government restricting or putting any extra tax on imports.

The New York Times in its last Sunday issue printed 775 columns of advertisements, which, it announced, was the greatest volume of advertising printed in any issue of that newspaper this year. This is illustrative of the heavy consumption of newsprint throughout the country—reduced somewhat, of course, this week in New York by the strike of local newspaper pressmen. Other than to New York City, the movement of print paper into comsuming channels is on a record scale, it is reported. Mills are working at top speed and are shipping out their product at a rapid rate. The market for newsprint is very firm.

Book papers continue to move in comparatively large volume. There is room for improvement in book paper business, but improvement is to be noted day by day as publishers gradually absorb larger amounts of paper. Prices are steady and are inclining upward. Coarse papers are in routine demand or a little better, with quotations maintained. Tissues especially are showing more life. Fine papers are in generally increased call, and this branch of the industry is showing pronounced improvement. Prices of bonds and ledgers tend higher, and the fall seems likely to witness advances in most lines of fine papers.

Reports concerning the board market are rather conflicting. Some mills are said to be enjoying good business; others apparently are in want of orders. On the whole demand appears to be developing in larger volume as paper box manufacturers are going into their busy season and are in need of increased amounts of board. Prices show no change at around $60 a ton f.o.b. New York for plain chip, and $62.50 to $65 for news board.

GROUND WOOD—Mechanical pulp continues in a strong market position in the States. There is a brisk demand from consuming quarters, and buyers infer they are experiencing difficulty in locating all the pulp they require owing to grinders being unable to operate in normal fashion because of low water. Market prices have worked up to a level where importers of ground wood from Scandinavian sources are able to compete in this market, sales of imported ground wood at from $44 to $48 a ton ex dock New York and other American Atlantic ports having been reported, prices depending on the air dry basis of the pulp and the tonnage involved. Canadian producers are reported to be still easily securing $45 to $50 a ton f.o.b. pulp mills in sales of prime spruce ground wood to American paper and board mills, and most sellers across the border are asking $50 or close to that figure on additional business. Practically no domestic ground wood is being offered in the open market, grinders in a majority of cases being themselves buyers instead of sellers under prevailing circumstances. Prices of domestic ground wood are nominally around $40 a ton at pulp plants.

CHEMICAL PULP—There is not much demand for chemical pulps. Paper and board manufacturers appear to have their needs fairly well covered for a time and are averse to entering further commitments. The fact that demand is slow, coupled with anxiety among some sellers to dispose of pulp, makes for a soft price tone. Probably the feature of the market is the selling of some kinds of pulp in certain quarters at rather sharp price recessions. Kraft is particularly weak. Board mills are neglecting this kind of pulp, and sales have been reported of strictly No. 1 Swedish kraft on the spot down to 3 cents a pound, which is some $5 to $6 a ton under the level at which kraft can be replaced in the primary market, it is stated by importers, who say that Swedish producers are quoting 3.30 cents a pound for kraft pulp for forward shipment. Indications are a surplus of kraft pulp has been created in this market which causes the easy market tone. Sulphite is steadier than kraft and yet the trend of sulphite prices is downward. Domestic manufacturers are selling prime unbleached sulphite at 3 cents f.o.b. pulp mills and No. 1 strong foreign unbleached is available at 3.25 cents ex dock New York. Bleached sulphite is quoted at around 4.25 cents a pound on the dock for No. 1 foreign, and at a range of 4 to 4.50 cents at pulp plants for No. 1 domestic bleached.

RAGS—The papermaking rag market is holding its own both as regards the amount of business transpiring and the position of prices. Mills are purchasing rags in a fairly consistent manner though there is reluctance shown about buying other than quantities directly and actually needed. Roofing stock is probably in relatively better demand than any other class of rags. Felt paper mills are paying 1.50 cents a pound f.o.b. New York for No. 1 roofing, and 1.40 cents for No. 2 packing, and are placing orders removing practically all of these rags placed on the market. Foreign dark cottons for roofing paper purposes are quoted at 1.50 to 1.55 cents a pound ex dock New York but importers as a general thing are hesitant to accept orders at this price basis owing to the high levels prevailing in Europe and the difficulty experienced in replacing stock at any cheaper prices.

Another firm class of rags is blues. Dealers in New York quote 2.75 to 3 cents a pound, depending on the quality of packing, f.o.b. this city for repacked thirds and blues, and around 2.25 cents for rough packing, while in other grading centers higher prices are named. Old white rags are steady in price and marked by a good demand.

PAPER STOCK Low grades of old paper have scored additional advancement in price this week. Folded newspapers are still the most generally sought grade and the firmest in price, with sales to board mills at 1.15 cents a pound f.o.b. New York reported and in some instances up to 1.20 cents. Packers lay much stress on the scarcity of old newspapers, and argue that the pressmen's strike in New York and the shutdown of newspapers will eventually lead to an even greater scarcity of this kind of old paper. No. 1 mixed paper is firm at around 85 cents a hundred pounds New York, and common mixed paper at 50 cents a hundred pounds. Old magazines seem in at least slightly better demand and good packing of heavy No. 1 books is bringing close to 2 cents per pound at dealers' shipping points though purchases at a couple of dollars less per ton have been recorded. Shavings are selling at about 3.25 cents a pound f. o. b. New York for No 1 soft white and 4.25 cents for No. 1 hard white, quotations on the former cents a little down from last week's levels. Old kraft paper is a firm item and No. 1 packing is fetching 2.25 cents a pound or a trifle higher at shipping points, while another firm grade of old paper is white blank news cuttings, which are quoted by dealers at 2.20 to 2.30 cents a pound in New York.

OLD ROPE AND BAGGING—Prices of old rope hold steady but without apparent change. No. 1 domestic manila rope is generally quoted at 5.50 cents a pound at shipping points but dealers in some cases are booking orders at lower than this figure, sales to paper mills at 5.25 cents having been reported, while foreign manila rope is said to have sold down to 5 cents ex dock at American ports. There is little business transpiring in scrap bagging. Few mills show a desire to buy, and prices are nominally around 1.25 cents a pound New York for No. 1 bagging and 90 cents to $1 a hundred pounds for roofing bagging.

TIMBER RIGHTS CONTESTED

Before Justice Gibson, a case was started in the Superior Court in which a sum of over $200,000 is involved, and in which the Price Bros. Company and the Provincial Government are interested. The Provincial Government contests the rights of the Price Bros. Company on 50,000 acres of timber land situated on the Lake Metis seigniory. Eugene Lafleur, K.C., Montreal, and Thomas Vien, K.C., Quebec, are representing Price Bros., while Messrs. Bouffard, of Beauce, are acting for the Government.

In this dark world where sorrow so abounds, there is no substitute for trust and hope in God.

HANS LAGERLOEF, President and Treasurer
ORVAR HYLIN, Vice President
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Finnish Cellulose Association
Helsingfors, Finland

AND

Finnish Wood Pulp Union
Helsingfors, Finland

BRITISH TRADE NEWS

From Our London Correspondent)

Sept. 11, 1923.

The wages question is at present engaging the attention of British mill owners and representatives of the men's unions. From what I can hear, as a result of some of the conferences recently held, everything is going on smoothly. This is a good policy, as the British paper industry in its present depressed condition could not very well afford to stand a strike. Some people would welcome an upheaval, but they do not consider the after effects. There is, however, a prospect of a settlement on the rates of wages and future meetings may decide the issue, which is in many respects a thorny one.

A Long Connection Ends

No one would hardly think of mentioning the British paper trade without drawing to memory the big, amiable, and happy disposition associated with the name D'Oyley Mears. The name is a familiar one in the industry and at all the big gatherings, whether smoking concerts, dinners, or trade meetings, they were never complete—particularly in pre-war days—if D'Oyley Mears was not present. His familiar bald head and grey beard were like a beacon in the industry and he had the heart of a child, being always ready to help in whatever way he could. And with the name of D'Oyley Mears there was always associated the "Daily Telegraph" mill; the two names in the industry were more in the resemblance of twins—"D'Oyley of the 'Telegraph' Mill." Now the twins have parted after years of sociable and amicable working. D'Oyley Mears & Co., have terminated their engagement, as agents for the mill, and it is stated that the adjustments effected are satisfactory on both sides. This change is one of many that are coming over the British industry. New faces are appearing almost every week in a depressed market and the old ones are simply fading away in obscurity. It may be a good sign and it may be a bad one—but, at all events, we would like to see more orders moving and some of the mills in a better paying position.

A sign of the times!

Shareholders in the North of Ireland paper mill have had the following document placed in their hands:— "I am directed by your directors to report that the half-year's trading to June 30 still shows the unprofitable nature of the paper trade. I also regret to say, we have had some labor difficulties, but these have now been amicably settled and both mills are working."

It is a sad story and there are other mills in the same plight—just paying their way.

Pulp Market Dead

The pulp market is still on the dead side. I asked a seller the other day if there was really anything doing and his reply was: "The market is as dead as Colonial mutton." It is certainly a poor lookout for any sellers with spot parcels. Prices are unchanged as follows, c. i. f., London and other ports:

Bleached Sulphite (No. 1)	£20
Easy Bleaching (No. 1)	£16
Sulphite Newsprint (No. 1)	£15
Unbleached Soda (No. 1)	£16
Soda Kraft	£16½
Groundwood (wet)	£5½
Groundwood (dry)	£10½

Of course, mills are well supplied with pulps and with business dull in the paper industry it naturally follows that pulp is dormant. But the present conditions in the pulp circles are not at all satisfactory and some of the problems require a good deal of solving. Within the last month, or six weeks, some fine shipments have arrived from Canadian sources, particularly of groundwood. This class of pulp is being supplied under contracts and the quantities that lie unsold are negligible. From what I can hear the labor question in Norway is not settled yet, but pulp and paper mills are still running. Scandinavians report also a dull market.

Paper For New Zealand

On September 5 a notice was issued from the office of the Trade Commissioner of New Zealand to London and other paper mills and paper agents inviting tenders for the supply of cream laid foolscap, and pass book envelopes required by the New Zealand Post Office telegraph departments at Wellington. Tenders are received not later than October 23 next. I am wondering if a similar notice was issued to the paper and envelope makers of Canada. It is not an important one, but I am hoping that New Zealand and Australia are not overlooking a paper producing country like Canada in regard to paper tenders. Canada has as much right to tender for New Zealand supplies as the British (and foreigners in them), mills and producers.

POWER EXPOSITION TO BE INTERESTING

The importance of effective exhibits at the coming National Exposition of Power and Mechanical Engineering is recognized by the management who plan to award Certificates of Merit to exhibitors who arrange their exhibits effectively.

The success or failure of an exhibitor may depend in a great measure upon the arrangement of the exhibit. Obviously, excellent products may be shown to poor advantage and mediocre devices may be exhibited so that visitors will be attracted, will receive valuable information and may be moved to purchase. To inspire the arrangement of good exhibits the management offers these merit certificates.

December 3 to 8, 1923 are the dates set for this National Exposition of Power and Mechanical Engineering and the place will be the Grand Central Palace, New York City. In addition to exhibits of devices for the generation of all kinds of power, space has been set aside for equipment used in the transmission of power. This will add greatly to the interest of the exposition.

The appeal of this exposition is to engineers not only in the power and mechanical fields but in all fields. The power man will delight in comparing competitive devices and in talking with the representatives of the exhibitors. He will become thoroughly acquainted with the entire field and will store information against the day when he has a troublesome problem requiring immediate solution when he will utilize the lore accumulated at the Exposition.

Rising fuel costs challenge the attention of all manufacturing executives and production engineers even though the power cost may be but a small percent of the cost of finished product. Under present manufacturing conditions, the coal pile is an excellent place to start economy and the devices to be shown at the coming Exposition are designed to effect that very thing. Furthermore, power is being used at a rapidly increasing rate and with the work of the world to be done mechanically, fuel must be consumed at a corresponding rate. So that not only is fuel economy made imperative by the demand for more economical use of fuel and heat but by a sense of duty to conserve fuel resources for future generations.

The managers of the Exposition are Fred W. Payne and Charles F. Roth with offices in the Grand Central Palace.

Pulp and Paper Magazine
OF CANADA

A Weekly Magazine Devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades

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J. NEWELL STEPHENSON. M. S., Editor.

The editor cordially invites readers to submit articles of practical interest which, on publication, will be paid for.

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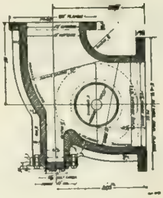

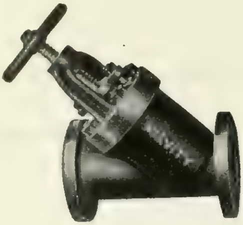

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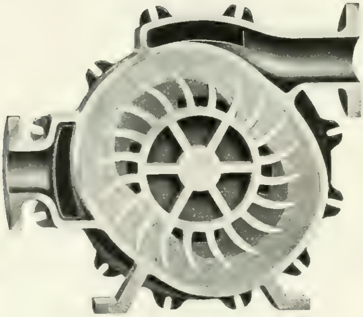

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EDITORIAL

DR. BAKER'S LETTER

On another page of this issue, we publish a frank appeal from the secretary of the American Paper & Pulp Association for a sympathetic consideration of the forestry situation in Canada and the United States with respect to the Pulp and Paper Industry before proceeding with the enforcement of an embargo on the export of pulpwood from Canada. Dr. Baker sums up, in an able manner, the general forestry situation as it is today, and indicates in an interesting way the almost certain development of the near future.

Much could be said in reply to Dr. Baker's statement, but to do so at the present time is unnecessary. There are one or two points, however, to which attention might be called. In the first place, the estimate is made that 75 percent of the wood imported in the United States comes from Canadian farmers and settlers. This would indicate that American concerns holding large properties in Canada are cutting either none or little of their available wood, probably conserving the remainder against a rainy day. It would be interesting to know how much of the wood purported to come from bona fide settlers is cut and shipped by loggers who are planted on good timber areas in the guise of settlers and who make a mere pretense of farming, and then abandon the farm or settlement when the wood is cut off. A very disturbing feature of this type of settlement, is the fact that the area taken up in this way is sometimes taken off from the limits leased by Canadian companies and on which they have been paying not only ground rent, but fire protection fees. The Government could well investigate this condition in order to afford some further protection to the Canadian industry. Anyway, we doubt whether 800,000 cords of wood is cut and exported by farmers and settlers.

Dr. Baker makes a considerable point of the fact that newsprint is imported into the United States free of duty, and intimates that this condition is a matter of courtesy to Canada from the American paper makers. It is nothing of the kind. As a matter of fact, the question of a duty on newsprint has been a continual source of contention between the American paper makers and the American newspaper publishers, and if the former could have prevailed, there would be a duty of from $5 to $10 per ton on newsprint today. Furthermore, this is no distinct favor to Canada as Sweden, Germany, Norway and everybody else enjoys the same privilege. It is also to be remembered that matters of tariff are not simply matters for one industry or one branch of any industry. The Canadian paper maker appreciates the condition of the Canadian farmer, and with him, feels the result of the effectual closing of the border to Canadian farm produce. Also the Canadian book and wrapping paper manufacturer feels the effect of an air-tight obstruction to the movement of his products to the South. We doubt whether any tariff measures have been introduced in Canada that have not had a previous American counterpart and example. As a matter of fact, recent tariff history shows reductions in the Canadian tariff, when there have been noticeable increases in the United States tariff.

Reference is made by Dr. Baker to the fact that but a small percentage of the total amount of wood cut in the United States is used for the production of pulp and paper, and that a somewhat similar, though considerably larger percentage is used for the same purpose in Canada. Intimation is made that all the destruction of the forest that has occurred in the United States should not be charged up to the Pulp and Paper Industry. That is quite correct, but it remains that pulp and paper companies are responsible for what they have done with their own holdings that have been devastated for obtaining raw material for their mills, and we should doubtless find that their holdings have the same proportion to the total forest area as the amount of wood used in the Pulp and Paper Industry bears to the total amount cut per year. We have here a very good example of the parable of the talents. The industry that had the one talent not only failed to make it grow and multiply, but did not even preserve it in its original condition. The Canadian industry is just about in the same fix, and there is no very great opportunity, unfortunately, to hand out any bouquets on either side.

We feel that Dr. Baker has done us a kindness in pointing out the situation as clearly as he has done. This applies, we feel, particularly in regard to the probable trend of forest developments, and the possibility even the probability, of the United States becoming not only self-supporting in forestry matters, but even a prospective exporter of timber. Canadians must take a hint from this and beat them to it. It is doubtless true that the imposing of an embargo would inspire American interests to planting and growth of trees, whereas there is grave danger that the very same measures would, to a degree, have the effect of a soporific on Canadian enterprize along those directions. Great care must be taken that a start is made at once and in the right direction.

DOUBLE CROSSED

There have been several incidents which reflect on the sincerity of the present Government with regard to its attitude respecting the embargo on pulpwood. It is reported on good authority that the Prime Minister definitely stated that there would be an embargo on pulpwood. An Act of Parliament was passed authorising the governor-in-council to formulate such regulations as might be necessary to restrict or prohibit the export of pulpwood in the unmanufactured state. In spite of the wealth of available material both in published form and unpublished in the files of Provincial and Federal forestry departments an expense-breeding commission was appointed to look into the matter.

Protest from those who purported to be representatives of the farmer and settler brought forth a statement that bona fide farmers and settlers would not be restricted in the market for their wood.

That was one cross.

The double cross on the embargo was effected on August 14th, when an order-in-council was passed qualifying the Act of Parliament respecting the embargo, and reading as follows:

"His Excellency the Governor-General in Council, on the recommendation of the Right Honourable W. L. Mackenzie King, the Prime Minister, and under and in virtue of the powers conferred by The Export Act, as amended, is pleased to order and doth hereby order and declare, with reference to the provisions of an Act to amend The Export Act, Chapter 46 of the Statutes passed at the recent session of Parliament, that whatever regulations may be made thereunder regarding the export of pulpwood from Canada, such regulations shall not be made applicable to or affect the exportation of pulpwood exported in fulfilment and in pursuance of the terms of bona fide written contracts duly executed and delivered previous to the 1st day of June, 1923; provided, however, that in the case of contracts calling for deliveries over a period of more than ten years from the date hereof the exemption hereby granted shall not extend beyond the period of ten years from the date hereof.

(Signed) E. J. LEMAIRE,
Clerk of the Privy Council.

In view of the immediate and vigorous activity of American interests with respect to the embargo as soon as the idea was seriously discussed, it is readily seen how easy it would be for any one selfishly interested in the matter to provide sufficient contracts for their future needs in anticipation of some action of this kind.

This action stamps the Government as a body to which a number of uncomplimentary adjectives apply, without aim, purpose or direction, and certainly without initiative. It makes the embargo legislation a ridiculous joke. It sends out the Commission with its hands tied, for what good will result from an embargo becoming effective ten years from now when all the available wood has been stripped off and shipped out.

There appears to be but one step now which this Government can take that does not proceed further on the downward path, and that is to impose an export tax on shipments of pulpwood out of the country which will be sufficiently large to be effective in restricting exports, and to specify absolutely that the revenue from such duties shall be applied solely to the protection and reproduction of Canadian forests.

COBWEBS

Mr. F. H. Devenish, who has for many months been serving the Pulp and Paper Magazine as Montreal correspondent and doing the work efficiently, is leaving in the near future for an indefinite stay in Cape Town, South Africa. He goes with our very best wishes.

THE MODERN TIMBER WOLVES

Halifax Herald

A Common Forest For A Common Market

BY Dr. HUGH P. BAKER, Executive Secretary
American Paper & Pulp Association

The pulp and paper industry in this country and in Canada is, in many ways, one big industry. We have common problems in preserving raw materials and in improving manufacturing activities.

With our common problems there is a very complex intermingling of market problems. We are the greatest market for your pulp and paper and you are a great market for our coal, oil, sulphur, and other products entering into various manufacturing industries. Not only are your industries dependent upon raw materials from this country but the householder in many parts of Canada needs coal and oil for his home or his automobile. It should be possible for use to solve our common problems in a way that will make for the friendly upbuilding of the pulp and paper industry on both sides of the line.

The question of the future of the forests in Canada and in the United States, producing as they do raw materials for the pulp and paper industry, is one which seems to have been confused a good deal by those who have sentimental or other interests and yet who know comparatively little of actual conditions. We both have been blessed, as no other countries in the world, with forests which have, until recent years, seemed inexhaustible, and to which we have given little attention except insofar as they could satisfy our needs for lumber and other forms of wood. In very recent times we have paid some attention to the protection of forests from fire, and yet what both countries have spent upon protection from fire is insignificant as compared with the value of the forests and the industries dependent upon them.

For twenty years those having sentimental interest in forestry, and a few public men who have known of the practice of forestry in European countries, have been urging conservation of forests here in the States. Little progress has been made in conservation because wood has been too cheap, and, as the forest in one section has been exhausted, it has been too simple and easy to utilize the timber from another section. Gradually, the forests of our Eastern States have largely been cut away until the tremendous demands which the country is making for lumber and other wood products has caused a turning to the Southern pine forests and to the forests of our Northwestern states. With all of the cutting, however, that has been going on in the past twenty years, we still have extensive and valuable forests left in both our Eastern States, the Northern Lake States, and in the South.

As in Canada, so in the United States, some of those who have all sorts of interests in the forest, except financial, and who would not be affected in one way or another by the embargo, have had much to say as to the effect of the rapid growth of the pulp and paper industry upon present forest resources. In the United States the pulp and paper manufacturer has been charged with wholesale destruction of the forest. The truth of the matter is that according to figures put out by the U. S. Forest Service, the total annual consumption of pulpwood from the forests of the United States is equal to about 4 per cent of the total annual cut of wood only, and about 7 per cent of the annual cut of lumber. Your statistics indicate that the pulp and paper mills of Canada are calling upon Canadian forests for a somewhat larger percentage of your total cut, and as large mills now projected in Canada come into operation doubtless a still larger percentage of the annual wood cut in Canada will go into her own pulp and paper industry.

The problem of conserving the forests of Canada and the United States is an economic problem. Down through the years, until today, wood has been so cheap in both the United States and Canada that private capital not only could not be interested in growing timber, but could hardly be interested in protecting timber from fire. Now, we are beginning to see the costs of wood passing the cost of its production, and gradually capital will be attracted to the production of timber as to the production of any other crop from the soil where the cost of the crop exceeds more or less the cost of production.

Recent investigations show that the annual cut of pulpwood from the forests of Canada is equal to 16 per cent of the total wood cut. Of the pulpwood cut from Canadian forests approximately 30 per cent is imported annually into the United States. Our investigations show further that approximately 75 per cent of the 1,100,000 cords brought into this country from Canada come from the holdings of the small settlers or farmer, and is brought by the pulp mills of this country through dealers. It is reported that the Canadian Premier stated recently in Parliament that it was not the intent of the Government to have this embargo, should it be enforced, apply to the holdings of the small farmer. Therefore, I assume, in this discussion of an embargo, that we are concerned with wood which equals but 1.5 per cent of the total wood cut annually in Canada. It would appear that this entire discussion as to an embargo involves but 1 1-2 percent of the annual cut of timber in Canada.

In view of the statement of the Canadian Premier, it may be out of place for me to discuss the vital importance to the settler and farmer in Eastern Canada of being able to market during the winter season a few cords of pulpwood from his wood-lot. No one is assuming on either side of the line that to remove the American market from the small settler in Canada would accomplish the conservation of Canadian forests. On the other hand it would put the Canadian farmer more or less in the position of having to sell to a restricted and a controlled market. If agricultural conditions in Canada are at all like conditions among American farmers, I assume that the embargo would hit the group that needs the most protection and help from the Government.

No one can doubt the necessity for the protection of Canada's forests from fire and for the development of more effective use of her forests. We are faced with the same needs in the States, and in many ways we are progressing together along these lines, and must continue to progress together in the solution of the problem of stopping forest fires, of preventing serious devastation of the forests by insects, and of more complete and satisfactory use. Canada has been slow to appreciate the fact that she has a very able body of trained foresters, who, like the foresters of the States, have been preaching forestry to an audience that would not hear.

Forest conservation, with all that it means, is an economic problem and a problem for the trained forester. If

Canada would bring to bear upon her forest problem the intelligence and the ability of her foresters, she could solve her forest problems to the point where she would not only continue to be a great producer of pulp and paper but she could continue, to her own advantage, to be a great exporter of wood. In view of the past history of the use of the forests of this continent, the practice of forestry will come slowly and only as sound economic development demands it. We cannot secure the advantages of forestry by legislation that fails to consider the economic issues involved.

Forestry is making progress in the States. When the sleeping giant—the public of the States—awakens to the need of widespread reforestation, there is no question but what the States will attack the problem of forest protection and replacement, as they have attacked road problems and other transportation problems. The United States has enough idle forest land East of the Mississippi and North of the Potomac, which, if planted to a productive forest of rapid-growing evergreens, would make the United States absolutely independent not only of Canada but of the world. Anything that Canada may do in the way of an embargo will probably but hasten the time when the United States will be her greatest competitor in forest products, and that under soil and climatic conditions much more favorable than exist in Canada. This is considering the Eastern States only. When one considers that certain woods can be grown to a size for pulpwood in the Southern States in from 15 to 20 years, and that we have national forests in the west equal to five times the size of the state of Pennsylvania, it is easy to appreciate what the States could accomplish when they turn their hands to the producing of timber.

Doubtless the placing of an embargo by Canada upon pulpwood would cause injury and some readjustments in the paper industry in the States. Contrary to general expectation in Canada, however, there is no reason to believe that the embargo would cause the moving of pulp and paper mills northward to Eastern Canada.

There is another element in this situation, which should be given very careful consideration. The greatest market for the products of Canadian pulp and paper mills today is in the States. It is my opinion that the great market for all time for Canadian pulp and paper mills will be the States. Canadian paper, necessarily, competes with our paper industry but not only did we not put an embargo on it but we have put onto the free list newsprint paper which is Canada's most valuable paper mill product. It is not at all likely that, even with a much greater development of the paper industry in Canada, her mills can compete in South America or Asia with the developing paper industry in a rejuvenated Europe. We know that there are vast areas of forests in Russia which are practically untouched. We know that foreign capital is but waiting the slow evolution of a safe government in Russia to undertake the development of these forests. The development of Russian forest means either pulp and paper mills in Russia or a constant supply of wood and pulp for paper mills elsewhere in Europe. We come back to the fact that the States have been, and always will be, the great market for Canadian pulp and paper.

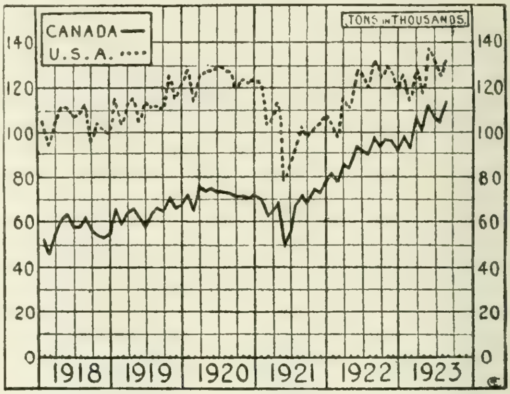
We are interested in a sensible and business-like facing of the problems which are common to both of us as one great industry, and we hope that we may solve these problems peacefully and effectively as we have solved common problems before this. Canada needs a market in the States. We need some of Canada's raw materials and Canada needs some of ours. Action on the part of Canada in the way of an embargo may benefit Canada temporarily. It will, however, have a marked influence not only upon the industry on our side of the line but upon the Canadian industry, and in my opinion it will go a long ways in forcing forest development in this country.

NEWSPRINT PRODUCTION IN AUGUST

Production of newsprint in August was greater than in the previous month both in Canada and the United States. Canadian production reached a new high total at 114,721 tons, the previous highest being 112,135 tons in May.

The U. S. mills produced 132,604 tons, compared with 125,768 tons in July.

The accompanying chart supplied by the Canadian Pulp and Paper Association, shows the steady increase in the production of newsprint by Canadian mills.



Figures for the first eight months of the year show a considerable gain over last year's output by the mills in both countries, the increase in Canada being more than twice that in the United States.

Details are as follows:

	Canada	U. S. A.	Total Tons
8 months, 1923	842,334	1,019,008	1,861,342
8 months, 1922	702,929	944,217	1,649,146

Canada's output for this period was greater than in the corresponding months of last year by 137,405 tons or 19 per cent.

Production in the U. S. A. was greater by 74,491 tons, or 8 per cent.

Total production was greater by 212,196 tons, or nearly 13 per cent.

CANADA'S TIMBER RESOURCES

At the present time it is possible to obtain only incomplete estimates of the forest and pulpwood resources of the Dominion of Canada. It is estimated by the director of forestry branch of the Department of the Interior that the forests of Canada have a value of over two billion dollars and that, including all classes of timber, raw material, pulpwood, ties, poles, fuel, etc., accessible and inaccessible, the total stand may be 986,800,000 M. feet.

FORESTER IN THE SAGUENAY

The appointment of R. D. Jago, M.Sc.F., graduate of the University of New Brunswick Forest School, as regional forester in charge of the Saguenay River district by the Price Bros., Ltd., is announced. He has been engaged with the forest service of New Brunswick and will leave shortly to take over his new duties.

Wrapping Paper Today & Yesterday

By B T McBain, Asst Gen Mgr
Nekoosa Edwards Paper Co.

Everywhere you go in every walk of life, wrapping paper is a necessity. Where is the business today, or the individual who does not almost daily find use for some form of wrapping paper, many resorting to the use of old newspapers for this purpose for want of something better?

Today, nearly every line of endeavor requires a special paper, making the product of the wrapping paper mill varied in nature. In fact the wrapping paper mill of today that is not equipped and does not produce Specialties is not in the running.

Today, the butcher requires a paper specially made for his purpose, blood-proof, light in weight, yet very strong, so the sharp points on the tee-bone steaks he furnishes his particular customers will not slip through the single thickness of paper he provides.

So it is with the baker, the grocer, the druggist and candy maker. All require something special in quality and many of them in many colors and weights.

But, today the auto business has brought out a demand for a very strong water proof paper for tire wrapper, which must be up to specifications of the Interstate Commerce Commission.

So it is with the heavy wrapper used by the trunk manufacturer which must be of a certain weight and strength. Almost every line is in like position.

The mail order houses use one thickness of paper of great strength for their mail shipments and if one package meets with disaster the paper is subjected to severe laboratory test and trouble is in store for the paper manufacturer.

So it goes on; the bag paper which is only wrapping paper in another form, is a specialty.

The green garden products middlemen and delivery men want a bag which in its single thickness will hold the celery or lettuce taken from the ice chest or from under the shower. It is up to the Paper Manufacturer to supply the bag factory with a grade of paper which will meet these specifications.

But look back only 10 to 15 years and see where we were. There were many grades, it is true, but the demand was not so critical in its requirements and paper of three or four grades filled the wants of all.

The butcher used a natural butcher's paper made from straw cooked in lime. It was very sanitary and clean but it was of a dark brown color. Today Mi-lady will not accept a package at the Butcher Shop unless it is wrapped to resemble the finer goods from the Department Store, so this natural butcher's paper went into the discard.

Following this a sheet was introduced known as Butcher's Manila which had a big run and is used in many sections yet today. This grade is better for butcher's purposes still than the grade known as Butcher's Sulphite and leaves the meat in better condition after being in the wrapper any length of time.

The dry goods store in the days of long ago used a grade of wrapping costing little more than newsprint, but today each house in almost every city of the land calls for a special grade and color and many of them even go to the point of having their paper watermarked. The Paper Manufacturer must be there to answer this whim and fancy.

Today the fruit grown on one side of the globe is quickly delivered for consumption everywhere but it must be specially wrapped for safety, for prevention of deterioration and rot, but particularly also for the eye of the final consumer. An orange not wrapped might have come from California or Florida and can be of as good quality but the consumer wants a certain brand of orange today in a majority of cases, known by the wrapper, as in other markets and products. Fruit wrap runs from the light No 10 tissue of all sulphite for oranges to the heavy water finished and other kraft bags for bananas, about which we sing so much nowadays.

Of course all these new requirements and demands for wrapping paper have called for more mills and new machinery, yet the demand for specialties grows more quickly than the mills can equip and take care of them

The wrapping paper mill man must be up on his toes and at it all the time to meet the requirements of all, for today it seems many business houses are more particular about the paper used in which to market their product than they are about the product itself.

Plumbing fittings must be wrapped in a certain highly colored, very strong paper and one shade off makes it unfit for the purpose intended.

Cheese cannot be wrapped in a butcher's paper but must first be wrapped in an oiled, or grease proof, or parchment wrapping and then covered by some special colored paper especially made for the cheese maker.

So it is with butter.

Eggs are put up in paper cartons of various patented designs, and the paper bag manufacturer has lost much of his business from this change of requirements of the product of the hen

We used to make a ham wrapper, very cheap it is true, but one which satisfied the trade and answered the purpose. Today this product of the Packer must be decorated beyond recognition so the wrapping paper manufacturer has lost one of his important grades and by-products, now known in many quarters as "Bogus" but at one time known the world over as "Ham Wrap"

Even matches today must have a special grade and weight and many mills today make Match Manila.

Envelopes are used today for wrapping purposes in great number and run in sizes from the small coin envelope to sizes of the Novelty and Haberdasher stores, even forsooth an envelope big enough for an automobile. Today a hat must have a special bag for almost every store in almost every village, while only a few years ago a piece of Manila wrapping paper did the work just as well.

This is a day of specialty and waste. These things all increase the cost of living, but have come to stay and are some of the reasons why things will never revert to the low prices, costs etc. before the war.

Standards, should be set up, however. Manufacturers should insist upon fewer colors, fewer grades, fewer weights, and fewer sizes. If Manufacturers cannot agree or if the Government will not allow them to do this kind of association work then the Government Standards Bureau should insists upon standards which will reduce the specifications to bounds within reason, to the end that the cost of production and cost to final consumer may be reduced.

And wrapping paper is only one of the many grades of paper on the market.

SILK AND CELLULOSE

By W. MAKIN

These two fibres are the only textiles in the world which are composed of a continuous length of thread. Other threads are built up from fibres of varying lengths and held together principally by twist. While silk and cellulose differ fundamentally in the fact that one is an animal fibre and the other vegetable, they have outward characteristics which are common to both, and in these only is cellulose able to qualify as a substitute for silk. These characteristics, of course, vary in degree, but the outward similarities are sufficiently developed that it is now commonly accepted as a very good substitute. Both of them are possessed of brilliance or lustre, elasticity and tenacity, and adaptability for twist; they will weave and knit and have the property of readily absorbing dye matter.

The remarkable brilliancy of cellulose is one of its outstanding qualities, its brightness even exceeding that of the natural fibre. Some consider it to be too bright, but common experience proves that that is no barrier to its utility. In fact, this element helps very much to give the "dressy" effect which so many desire. If it should be a question of aesthetics it has certainly found favour with the majority, and while attempts have been made to dull its brilliance, there does not yet appear any serious demand in this direction.

Combined with its superior lustre, there is the inseparable quality of smoothness, which is extremely high. In some respects this counts much in its favour, for it is claimed to possess the important factor of not holding particles of dirt or dust quite so readily as does the natural fibre. This makes it easier to remove any specks which happen to fall upon it; consequently, cellulose is liable to remain cleaner for a longer wearing period than silk. This feature also gives the advantage of reducing to a minimum any friction results which may be expected in the various processes of manufacture, though its smooth surface certainly gives rise to disadvantages in other respects such as creating a tendency to slip. In some processes of twisting when the bobbin is spinning in an upright position this is liable to happen, causing several layers to fall down; the smooth character of the thread thus becomes a fruitful source of waste. This defect also appears in some classes of cloth where the weft end is cellulose, for the ends in the tissue are easily removed from their place with a sharp pull between the thumb and finger.

In knitting, the defect of smoothness is considerably reduced by means of the lock-stitch, but other knitted or crocheted goods very soon show this defect, particularly if any of the threads accidentally get broken, or should a knot happen to slip.

Special attention must also be taken with cellulose which is packed for transit. If the receptacle happens to be bobbins, these should not be filled quite full and should be wrapped individually in paper, or otherwise carefully packed, so as to avoid friction of any kind. — Textile Recorder.

YEAR SHOWS MUCH IMPROVEMENT

Percentage Changes in Production and Shipments of Identical Mills in August, 1923 as Compared with July, 1923

Compiled by American Paper and Pulp Ass.

	Production	Shipments
Newsprint	4%	— 3%
Book	+20%	+18%
Paperboard	+26%	+25%
Boxboard	34%	—31%
Wrapping	7%	—11%
Bag	45%	—19%
Fine	+ 8%	+ 9%
Tissue	9%	—13%
Hanging	2%	— 4%
Felts and Building	13%	—11%
Other Grades	+ 1%	+ 6%
Total All Grades	+15%	—14%

A COURSE IN INDUSTRIAL METALLOGRAPHY

An Industrial Course in Metallography given by Harold J. Roast under the auspices of the department of Metallurgy of McGill University will be as follows:

Under the auspices of the department of Metallurgy at McGill University an extension course in Metallography will be given as in previous years by Messrs. Harold J. Roast, F.C.S., F.C.I.C., and Charles F. Pascoe, F.C.I.C.

The course consists of fifteen periods, held on Monday nights at the Chemistry and Mining building McGill University, commencing on Monday November 5th at 8:00 P.M.

Application should be made to Dr. Alfred Stansfield, department of Metallurgy, McGill University.

The fee for the course is $20.00 payable to the Bursar.

In as much as only twelve members can be accommodated at one time, students will be enrolled in order of their applications.

In past years the class has been composed of mechanics, engineers, chemists and those desiring a winter hobby, or whose business brings them in contact with metals and who desire to have more knowledge of their composition. No PREVIOUS KNOWLEDGE IS ASSUMED and the course is essentially practical from first to last.

If any students from a previous year desire to continue their work provision will be made for an advanced course if sufficient members are obtained.

Ferrous and non-ferrous metals are dealt with equally, training being given in preparing them for examination under the microscope and finally photographing the various structures developed.

An Empire Economic Policy

Co-operative Production and Reservation of Markets

By JOHN S. HECHT, F. R. E. S., Co-operating In The Empire Mail

That Great Britain and the Empire can and should be self supporting is the view of Mr. John S. Hecht, who, in the following article, which is of great interest in view of the forthcoming Imperial Economic Conference, deals with the necessity for the organization of production within the British Empire. Differing on some important points from orthodox economists, the opinion of Mr. Hecht is that the value of a large volume of exports is illusory, and that competitive foreign trade may result in a loss. The reservation of the home market he regards as essential, imports which compete with agriculture and skilled industries being excluded. Great Britain, under this scheme, would give preference to the Dominions, and the Dominions to Great Britain, by the first refusal of the home market. The writer of the article was born and educated in England. He gained a diploma in engineering at the Federal Polytechnic, Zurich, and has been for twenty-two years a director of electrical manufacturing concerns in Great Britain. He has developed a complete system of economics in his book "The Real Wealth of Nations."

The foundation of any sound policy must be an immutable principle. The first principle of an Empire policy is that each member consider its own interests, and that other members should not regard such action as a cause of offence. Let us begin by considering the Empire's production.

The policy of *laissez-faire*, or of producing goods in the hope that they will be sold, is founded on the fallacy that "the quantity of every commodity brought to market *naturally* suits itself to the effectual demand."* That it does nothing of the sort is proved by the chaotic state of production ever since the industrial era began. Production must always precede effectual demand, that is, the actual need, by a long period. In agriculture this period is about nine months. In the case of imports from the Dominions it is even longer. Britain's yearly demand for food-stuffs is ascertainable from the previous year's consumption, just as the yearly output of a factory is calculated from past sales. A single factory requires organization. How much more so does the aggregate of factories which constitutes the productive capacity of a nation or an Empire? By organizing the Empire's production—the contribution of each Dominion being decided by mutual agreement—there will be no over-production, nor, if storage facilities be increased, any danger of a famine. Production will be stabilised both in Great Britain and throughout the Empire. Division of labour necessitates the co-ordination of production. This fact was recognized by every self-supporting village community prior to the industrial age.

Great Britain cannot at present feed herself, yet if the day arrives to which we look forward—viz., when she will produce her whole food supply, her demand for such products will cease. The Dominions will be called upon to supply her with such goods only as she cannot produce for herself. The volume of Empire trade will then diminish. Does this matter? No, not in the least. The Dominions will produce for themselves a mass of commodities which they imported previously from Britain or from other countries. Canada, for instance, is developing her industries already.

The "Cheapest Market" Fallacy.

The idea that the volume of its foreign trade is the measure of a people's prosperity is one of the most astounding illusions of the day. Foreign trade is of two kinds: Co-operative, in which the imported goods are not producible at home; competitive, in which the imported commodities compete with the home manufacturer. The former is beneficial, providing the imports advantage a considerable proportion of the community and do not comprise expensive or harmful luxuries. An increase in co-operative trade means a greater total production and more employment. Competitive foreign trade, on the other hand, may be exceedingly harmful. It does not increase, but merely changes home production, and may disorganize it. Nor is this all. It is generally believed that buying in the cheapest market, taking advantage of a lower foreign price, results in a national profit. The effect may be a national loss.

If Britain imports Argentine beef because its price is lower, the price difference appears to represent a national economy. This economy is, however, a mirage. British money does not pay for the imported meat, but some exported goods which the foreigner buys with our money. The cost to Britain of producing beef at home must be compared to the cost of producing these exported goods. What therefore is the national cost of production? It cannot be the amount of the wages paid, because high wages benefit their recipients. The national cost of producing 1,000 tons of beef in Britain is simply the total of the necessaries of life consumed by farmers, labourers, and their dependents while so engaged. It is proportional to the number of working days. The same reasoning applies to the cost of the exported goods.

Britain's chief export of manufactured goods is textiles. It may cost her more labour-hours to produce £1,000 worth of the latter than £1,000 worth of beef. If it does, the total production of Great Britain declines—the working-day is lengthened through buying cheap meat from the Argentine. This truth can be illustrated in another manner. If we ignore the profits of employers, or even imagine employers abolished altogether, the more hours expended in producing goods of a certain price, the lower must be the average weekly wage. According to the British census of production, published in 1913, the average wages paid in the engineering was 50% higher than that paid to textile workers. Consequently, by exporting textiles instead of engineering products to pay for her food, Britain was wasting labour-hours, and condemning her people to a lower standard of life.

Importance of Skilled Industries

The prosperity of Britain in the nineteenth century is attributed to the volume of her foreign trade. It was due, in reality, to its quality. Great Britain had a practical monopoly of high-waged, or skilled industries until the year 1880. She exchanged in almost every case less labour hours for more. Nowadays, her policy is just the reverse. Statistics of the wages paid show that she imports largely the products of skilled industries, exports those of unskilled. Buying competitive products in the cheapest market can result, therefore, in a national loss.

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* **Wealth of Nations**, Book I, chap. 7, vol. 1., p. 59 (Cannan's Edition). "The theory of 'adaptation' remains even to this day the basis of our theory of production." — Prof. Charles Rist **A History of Economic Doctrines**, page 82.

It follows that Britain must only import agricultural produce to make good a deficiency—agriculture being a vital industry—and that she must refuse to accept products which compete with her highest waged industries. Efficiency of production depends upon output, and upon certainty that the whole output will be sold. If a country can make itself suitable for a skilled production, she must produce as much as possible, and the only market of which she is certain is her own. In other words, not only Great Britain and the Dominions, but every country possesses the inalienable right to reserve to itself its home market. This first principle of the division of labour was admitted by Adam Smith.[*]

Establishment of a Fair Price

Having dealt with the organization of production and the reservation of the home market, the next feature in our policy must consist in the establishment of a fair price, and the stabilization of prices. According to the doctrine of *laissez-faire* this is impossible. Prices must depend upon competition; they must vary with supply and demand in some wonderful manner. Nevertheless, the fixing of wages, or of the price of labour, is a denial of this law, and the prices of commodities can be fixed likewise.

At first sight the regulation of prices appears to necessitate a huge bureaucracy, yet under our present system thousands of persons are engaged every day in *altering* them. Further, some prices are fixed even in these degenerate days. Those of railway tickets, for instance. We should be very surprised if on asking for a ticket we were informed that its price had risen owing to a greater demand.

The abolition in the eighteenth and nineteenth centuries of all restrictions on the price of labour and goods was due to acceptance of this doctrine of *laissez-faire*, or "economic liberty," and the latter was founded on a belief in equality. Were men equal, liberty would be innocuous. As they can never be equal, economic liberty inevitably causes oppression. The cure for the latter is not liberty, but justice. The result of economic liberty can be seen in the slums, wherein dwell so many of our working classes; in the existence of undeserved wealth cheek by jowl with unmerited poverty. Division of labour necessitates not only the organization of production, but the regulation of exchange of prices.

Fixed Wages and Prices

The first step towards price-fixing lies in the establishment of a basic wage. The cost to a farmer of producing wheat in Great Britain is made up principally of the wages of agricultural labourers and of those connected with the industry; the cost of handling and selling wheat, of the wages of transport-workers, clerks, etc. The price of wheat is these costs plus interest on capital and the several profits. If the profit of the farmer be fixed on the basis of the average output at present attainable, and that of middlemen be limited, as it should be, the consumers' price is also a fixed one. That the corollary of fixed wages is fixed prices is evident if we imagine all profits abolished. Prices are then synonymous with wages.

Professor A. C. Pigou objects[**] that "if the State adopted a general policy of forbidding farmers to charge abnormally high prices when there are bad harvests, this would check investment in agriculture." On the contrary, if a minimum profit were assured, and a portion of the profits of good years were reserved to cover the losses of bad ones, more capital would be invested in agriculture. As for the farmers, the effect of a fixed price for their products is to induce them to produce as efficiently as possible, when if the increased profit were shared among their labourers, all those engaged in this industry would co-operate to attain the highest yield at the lowest labour-cost. The price of wheat, and of all agricultural products, can be fixed forever, providing a basic wage is fixed and co-operative production becomes the rule.

The true purpose of money is to facilitate the exchange of goods. The chief desideratum in regard to money is that its purchasing power remains constant. This point need not be enlarged upon further. But the purchasing power of money is shown by the price of commodities. Hence, it will remain constant only if prices are fixed. It will be unaffected by the amount of gold in use, or by its cost of recovery. A piece of gold never was and never could be the standard of purchasing power. The latter is decided in the first instance by the price of necessaries of life, or by the living wage of an average family, which is a constant under our scheme.

The amount of this living wage is quite arbitrary in the first instance. If it be fixed at a higher rate in Australia than in England, prices will be higher there. If Britain purchase goods from Australia, the rate of exchange comes into question. It should correspond to the purchasing power of money in each country. Let us assume that it does. The rate of exchange will then become a constant also, providing prices are fixed.

Effect of Protective Duties

It might appear that an increased production will make it impossible to fix permanently the prices of commodities and the rate of exchange, yet if the share of a greater production be distributed by way of profit-wages or dividends, prices will remain unaffected. Everyone will merely have more money in his pocket.

For this reason, all protective duties should be abolished. Their effect is to raise prices; to reduce the purchasing power of money; to prevent stability. The revenue derived from such duties is a snare. It represents an unsound form of indirect taxation. Since the true aim of tariffs is to prevent interference with home production, it miscarries if any competitive goods enter. A wall which fails to keep out trespassers is useless.

Protection is a great principle—the principle of self-protection, of self-preservation. Its realization is only possible through prohibiting imports to the extent of the maximum home production, through importation under licence. Providing, prices are fixed, the consumers' interests are safe-guarded under a licence system, and the question of favouritism in their allocation does not arise. The British Economic Government grants a licence to its importers for a definite quantity of goods. A Dominion Economic Government decides the share of its own producers to these imports. The interests of the British producer are not jeopardized by the admission of Dominion produce to remedy a deficiency in home production.

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[*] "And thus the certainty of being able to exchange all that surplus part of the produce of his own labour, which is over and above his own consumption, for such parts of the produce of other men's labour as he may have occasion for, encourages every man to apply himself to a particular occupation, and to cultivate and bring to perfection whatever talent or genius he may possess for that particular species of business."—
Wealth of Nations. Book 1, Chapt. 2, p. 7 (M'Culloch's Edition,) 1863.

[**] The Political Economy of War

Woodlands Section

A CANADIAN REPLY

Mr. Allan Curtis, a vice-president of the International Paper Co., is reported to have made some remarks recently, which aroused the Quebec "Chronicle" to reply. The "Chronicle" has, for a long time, been in close touch with lumber and pulp affairs and the following editorial statement of the case regarding the embargo is very apt:

"The Canadian Press, in a despatch from Three Rivers, reports an alleged interview with Allan Curtis, in which this gentleman takes vigorous exception to the proposal that an embargo shall be placed on the export of pulpwood from Canada. He ventures, moreover, to make a somewhat rude appeal to the prejudices or the cupidity of Canadian farmers and settlers, and even permits himself to employ the open threat that, if this narrow and short-sighted measure is ever put into force, there shall be retaliation from the United States.

"The Canadian farmers and settlers have nothing to gain and everything to lose, Mr. Curtis is quoted as saying, 'if the proposed pulpwood embargo is ever put into force. I trust that Quebec, which has the reputation of being a land of common sense, will kill the measure. Our companies are strongly against the embargo. We buy immense quantities of pulpwood here in Canada, and especially in this province, and we pay good and fair prices for it. With the embargo in force the farmers, and especially the settlers in the new districts of colonization, will have no more market for their forestry product, and the whole colonization policy of the province will be thereby badly affected.'

His Interests

"The reason for this gentleman's stand can be very readily understood, and his bias is so obvious that one would not suppose it likely to deceive anyone. He has every right to take any action he considers necessary to protect his own interests, within reasonable limits, but he has no right to exceed those limits, more particularly when he is availing himself of the hospitality of a friendly land.

"One can only suppose that Mr. Curtis has no intimate knowledge of Canadian national character, and we therefore advise him, in all courtesy, that while the people of this country are amenable to reason, they are little apt to be moved by threats or attempted coercion. If there is anything he could do that would be calculated to arouse public sentiment in favor of the embargo that he disparages through fear, it would be precisely by flaunting the bogey of retaliation in our faces.

"Kipling knew better than this, when he wrote of Canadians that they were little used to lie down at the bidding of any man.

"Canadians were not alarmed by the possibility of retaliatory measures when they rejected the reciprocity pact of 1910, that had been hailed by public men in the United States as the first step towards annexation.

"Canadians did not wait on any American permission when they voluntarily entered the world conflict in 1914, on the brink of which their neighbors stood shivering in uncertainty for three long, fatal years, too proud to fight. Canadians have not whined or blustered when an embargo upon the coal which heats them through their bitter winter season has been spoken of, knowing well that it is the duty as well as the right of the Washington Government to see that there is sufficient fuel for domestic consumption, but have sturdily applied themselves to the problem of attaining independence in this vital respect.

No Whimpering

"Still less have Canadians whimpered when Congress, at the behest of the American farmer, has reared high its tariff wall against the entry of Canadian products, but have quietly turned their attention to the opening up of new markets, with a considerable measure of success.

"Whether a pulpwood embargo shall be enforced or not will be decided by the Canadian people for themselves, uninfluenced by outside pressure from any quarter, and if Mr. Curtis voiced American feeling, which we are sure he did not, when he spoke of retaliation, their reply would be short and to the point—'retaliate and be damned.'

"We should be glad to know with what authority Mr. Curtis takes it upon himself to discuss the colonization of this country, but that he speaks with all the enthusiasm of ignorance is obvious, since a child might know that the permanent interests of colonization do not rest on any temporary advantage to be gained by stripping the forest domain for price, but on the solid foundation of home markets created by properly developed domestic industries. In this very district of Quebec we have had abundant experience to prove that when the woodlands have been cut down and the woodland industries have consequently vanished, they have automatically taken the settler with them. Mr. Curtis may dazzle the eyes of simple farmers with his highly polished gold brick, but he cannot alter the facts.

"Those who are advocating the conservation of our natural resources for the benefit of our own industries are not doing so through any ill-will to others, or as a means of economic warfare, but simply out of loyalty to their own country and their own countrymen. Mr. Curtis and his friends are anxious that Canadian pulpwood should be exported, for the very good reason that their own domestic supply has been exhausted, or is nearing the point of exhaustion. Naturally, they are not worrying whether Canada's supply may become exhausted also, but we of the Dominion may be pardoned for exhibiting a very lively concern on that score, in view of the urgent warning from competent experts.

"This is the whole situation in a nutshell, and it needs little stretch of the imagination to picture the stand that the same Mr. Curtis would adopt no less aggressively, were the positions of the two countries reversed."

* * *

Contentment does not depend on what we have but on what we are.

ONE WAY TO BLOCK THE EXODUS OF POPULATION

By ROBSON BLACK, Manager, the Canadian Forestry Association

The exodus of population from Canada to the United States, as unpleasantly reported from official sources, represents the natural flow of workers to the points of high wages and what they conceive to be better living conditions. Artisans and farmers, urgently needed by Canada, have moved south at a rate which would be disquieting were it forgotten that sooner or later a northward trek will bring many of them back home.

In all the talk of exiled population, it seems to have been wholly overlooked that the Forests of Canada, past and present, have been steadily pulling population into the Dominion. The pulp and paper industry alone has drawn to this country, directly and indirectly, tens of thousands of home owners. The lumber industry, in turn has established thousands of small communities, all built upon the security of the forest resources, Emigration to the United States has not been fed by the forest industries of this country. On the contrary, the army of 12,000 well-paid Canadian workmen, employed in forest manufacture, has not only held its own but has added to its numbers during the past two or three years of our national experience.

What Lies Behind a Job

The street-corner economist and not a few of the politicans see a procession of workmen in a pulp and paper town as a product of localized activities—a water power, a factory, and good financial management. They do not appreciate that every penny of wages, every dollar of capital, every carload of product, is a creation of the living forest. They do not know that the 'life expectancy' of a square mile of timber is automatically the measure of just so many jobs, so many tons of production. They do not know that the human use of the land on which the timber grows is at an end for perhaps a century once the timber growth is destroyed.

Eighty per cent of the habitable portion of Canada, said the late Dr. Fernow, is of no agricultural value.

Sixty-five per cent of New Brunswick and Nova Scotia is fitted only for growing timber.

Of Ontario and Quebec, by no means is the proportion of arable land thirty per cent and British Columbia shows much less than that. The prairie provinces, taken as a group, have not more than a third of their area as potential plow land.

Why Population Remains

What population is this eighty per cent of Canada to attract and hold unless it be a population associated mainly with forest industries? How shall forest industries be attracted and held unless the forest itself is rigorously protected and maintained?

Eliminate the forest resources from New Brunswick and at once the means of livelihood of probably two thirds of New Brunswick's municipalities is shut off, with no possibility of substitution from other activities. The main source of employment is forfeited. The foremost source of provincial taxation is cancelled. Other provinces would stand the loss of forests but little better than New Brunswick.

From the standpoint of the right use of public-owned lands, the momentous consequences of our present steady deterioration of the forest resources stands in an equally unfortunate light. The one and only crop that the greater part of our national area will produce is timber. To surrender the forest crop to destruction by fire means a wait of sixty to one hundred years, during which time the Canadian people are deprived of all economic dividends from that area. It is a wholly mistaken, although widely held, notion that when forests go farms follow. The sequence was true enough—in 1850—but the common rule of 1923 is that when forests go, barrens follow, and keep following, far into the days of our grandchildren.

Keep Canadians at Home!

"Keep our present population," sounds louder and louder in current editorial comment.

The answer is not in terms of a budget speech or a roving commission. It is no more complex than a child's set of building blocks. . Since the forest resources are the keystone of population in Canada, the exclusion of forest fires is an obvious and vital method of perpetuating the advantages that forests give us.

The most direct and result-giving method of "Keeping present population" is to apply public monies to outlawing the menace of forest fires.

If five hundred dollars, or two hundred, can be spent on attracting one settler to Canada's shores, surely a fifty cent piece can be spent on forms of forest fire prevention that with perfect certainty will retain for Canada half a dozen workmen whose presence depends upon a never-failing crop of timber.

SENATE COMMITTEE FEARS TIMBER FAMINE

Reflecting anxiety over the prospective depletion of United States forestry reserves, and urging the immediate need of increased reforestation, the New York Herald, says:

"Perhaps the declaration by the Forestry Committee of the United States Senate, now in session at Seattle, that the timber reserves of Washington will be depleted in eighteen years will carry conviction and awaken the country to a sense of the immediate need of increase in reforestation.

"Coming as the result of an extensive inquiry by the highest Federal authority on the subject, it should have weight and arouse a sentiment that would not be stirred by individual opinion, no matter how expert its source.

"Washington contains much of the big timber left on this continent. The Douglas fir reaches its highest development on the Pacific coast in Washington and across the Canadian border. These giants of the forest when reduced to lumber find a ready market at home and abroad.

"While it is a late date to take up re-forestation in order to meet the growing demands of the future, late action is better than none. Millions of acres of waste lands all over the Union could be made productive under intelligent forestry supervision. It is to be hoped that the Senate Forestry Commission findings on the Pacific will receive the widest publicity. They should be in the hands of the conservation commission of every commonwealth of the Union."

Doing right is the surest criterion of personal honor and abiding integrity.

Correspondence

Pulpwood Embargo Facts

Editor, "Journal of Commerce".

Sir: — I can quite realise that my "bombardment" of the newspapers with letters advocating an embargo on unmanufactured wood may be irritating to those who may have some selfish interest at stake, although it is meeting with the unqualified approval of those whose only interest is the public welfare.

Some opponents of the embargo have endeavoured to create prejudice by personal attacks on me and my motives in so earnestly advocating an embargo. They lose sight of the fact that it is not a personal question at all but one of national concern, and if my arguments are sound and logical it matters not to the public what my business interests are now or may have been in the past. However, for the discomfiture of those few who would try to draw the proverbial red herring across the trail, I will make a few plain statements of fact, all of which can very easily be proven, with regard to this seeming anomaly of a man who retired from active business, is willing to devote his time and means to a matter of public interest solely from an altruistic motive.

In the first place, I am merely a plain ordinary man whose chief qualification is a capacity for hard work and an ardent love for my country. My situation is that having acquired a sufficiency of this world's goods, I divided one-half of my property among the members of my family several years ago, and the remaining half I have now dedicated to the work of forest conservation. For the information of those who have insinuated that there are other interests behind my movement, I may say that I am conducting a purely personal campaign which was conceived in my own brain and financed out of my own pocket, and that with the single exception of a casual meeting with one man I have never even met nor do I know by sight any of the pulp or paper manufacturers in the Dominion of Canada.

Some of the hirelings of the American opponents of the embargo have suggested that lands which I or my family own in the United States would be benefited by an embargo and that my pulp mill in Nova Scotia would also derive benefit. For their confusion I will state that I do not own an acre of land or any interest in any land in the United States, direct or indirect, and that the entire holdings of all my relatives combined in land in that country not already stripped of pulpwood amount to less than thirty-five thousand acres. Since the pulp mill in Maine, in which they are interested does not either own or control an acre of land other than through the above small holdings, it will readily be seen that they will be in exactly the same boat as all other pulp and paper manufacturers in the U. S. when the embargo is applied. With regard to my ownership in the 400,000 acres which I control in Nova Scotia, since this is all fee land from which the wood is now exportable to the United States, these opponents to the embargo will not have the temerity to say that there can be any selfish interest at stake in this connection.

Insofar as a wood supply for my Nova Scotia mill is concerned, as this mill only consumes a matter of some 11,000 cords annually, it would leave me a large surplus of wood for export if I so desired. This mill is at present buying all its supply from the farmers, thereby saving from export at least that quantity of wood, although I have urged the farmers time and again, not only in Nova Scotia but in all Canada to conserve their trees just as long as possible in order that they may reap the full benefit of the higher prices that are coming in the immediate future owing to the exhaustion of the wood supply. The fact must also be borne in mind that there are some eight other pulp mills in Nova Scotia which are largely dependent on farmers' wood for their existence. It is perfectly safe to say that at the rate land and wood are being bought up in Nova Scotia by American interests, within three years time the wood-using industries of that Province which have not a sufficient supply on their own lands will be out of business.

So much for the Personal Element.

Now as to the suggestion that since a "royal commission" has been appointed to "investigate" the pulpwood situation everybody should fold his hands and sit quietly by to await the outcome of the deliberations of that august body — deliberations which, the chairman himself has explained, will occupy months if not years to conclude.

"If" there was anything for a royal commission to discover that was not already only too well discovered; "if" a commission had been appointed competent to deal with the matter; and "if" the forest situation was not so alarming, it would be quite in order to await the findings by that body, as suggested, notwithstanding the truism of Disraeli, particularly applicable in this case, that "royal commissions are appointed to discover things already known to the people." Any reader of the newspapers of ordinary intelligence is fully apprised as to our forest losses from insect pests, fires, wind storms and our enormously increasing exports, aside from the necessities of our own rapidly increasing wood-using industries. Attempts have been made to minimize the fire losses by reference to the amount of wood subject to salvage, but it is a fact that only a very small portion of fire-killed timber can be salvaged owing to the astounding swarms of borers that are now infesting our burned-over areas. I have just received a letter from a large timberland owner who had quite a large area destroyed by fire the present season, in which he says: "I have had the land carefully examined and find that the pine is already badly bored, and that it will only be throwing good money after bad to try to cut and save it." And what is true in his case is true in most.

We must not take the suggestion of the Premier of Quebec that the placing of an embargo is ultra vires of the Federal Government too seriously, as Mr. Taschereau in the past has been perhaps the strongest advocate in the whole Dominion of Canada for home manufacture for not only our pulpwood but all other raw materials, even going so far as to say that Quebec's raw materials should be manufactured in Quebec, because insofar as our pulpwood is concerned, with the enormous losses we have recently suffered through insects and fires, the necessity for conservation is far greater to-day than when this wise policy

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TECHNICAL SECTION

Review of Recent Literature

SODA PROCESS

F-0 Losses in Making Soda Fiber. E. SUTERMEISTER. **Paper Mill** 47, No. 22, 38, 60 (June 2, 1923); **Paper Ind.** 5, 488-9 (June 1923). Brief discussion of the losses caused by poor quality wood, and of heat, soda, lime, fiber and time losses.-A.P.-C.

PAPER MACHINE

K-4 Pulp from Banana Waste. D. A. MACCALLUM. Eng. pat. 194,257. The crushed waste and its juice are boiled in water under pressure for 3 to 6 hours. The mass is then transferred to the beater and the gummy residue is washed away by succeeding currents of water. No chemicals are used, so that the resultant pulp will be light in color.-A.P.-C.

K-12. Paper Making Wires. V. Bouyer. Papeterie 43. Sept. 10 and 25, Oct. 10, 1921. Paper Trade J., 76, No. 2, 49-53. No. 3, 45-48, No. 4, 49-53 (Jan. 11, 18, 25. 1923). A detailed description of the different weaves of wire cloth used on paper machines, of the kind of work best suited to the various kinds of wires, and of the causes of deterioration.—A. P.-C.

K-12. Paper Makers' Felts. H. F. Obermanns. Pulp and Paper 21, 355-356 (Apr. 5, 1923). Pointers on the proper care of paper machine felts.—A. P.-C.

K-12. Effects of the Arrangement of the Suction Boxes on the Life of Fourdrinier Wires. E. Messmer. Mon Papeterie Francaise 52, 323-325 (June 1, 1921). Pulp and Paper 20, 2035-2036 (Dec. 28, 1922). See Pulp and Paper 20, 523 (June 22, 1922). Paper Trade J. 74, No. 11, 55 (Mar. 16, 1922).—A. P.-C.

K-12. The Wear of Paper Machine Wires. V. Bouyer Mon. Papeterie Francaise 53, 391-393 (Aug. 15, 1922). Paper Ind. 4, 1384-1385 (Jan. 1923). A brief discussion of the most frequent causes of wear of paper machine wires.—A. P.-C.

K-12. Dryer Felts and their Importance. Paper 31, No. 25, 7-8 (Apr. 11, 1923). A discussion of the relative merits of wool, cotton and asbestos as material for dryer felts, showing the differences in the water absorbing qualities of these products.—A. P.-C.

K-12. Dry Blisters in Papers from Hard Stuff. Paper 31, No. 23, 7-8, 12 (Mar. 28, 1923). A discussion of the causes of the formation of blisters, showing that the reduction of the degree of beating is the only effective remedy. Increasing the tension of the dryer felts influences the contraction of the paper but does not stop it.- -A. P.-C.

K-12, G-8. Ball Bearings for Paper Machinery. Gordon James. Pulp and Paper. International No., 95-97 (Dec. 1922). Ball Bearings are used successfully in paper mills where: (1) bearings of ample size have been selected, (2) bearings are correctly applied and with proper knowledge, (3) machinery is properly cared for. The saving in Fourdrinier wire effected by the use of ball bearings for breast, table and couch rolls is briefly discussed, as is also wire tension. Ball bearings are extensively used for cylinder moulds for both board and wet machines, where they effect appreciable felt economies.- -A. P.-C.

K-12. The Wear of Iron Couch Rolls. M.-F. Englhart. Wochbl. Papierfabr. 54, 1170 (Apr. 28, 1923). The disadvantages of using iron couch rolls are briefly discussed. It recommended that such rolls be covered with a heavy copper jacket. — J. L. P.

K-12. Causes of Variation in Weight of Paper. G. M. Johansson. Pappers Travarutidskrift, Finland. No. 16, 265 (1922): Papierfabr. 21, 21-23 (1923). Paper 21, No. 21, 11-12, 14 (Mar. 14, 1923). A general discussion of the various causes for variations in weight of paper: irregularities in the speeds of the various parts of the machine, in the consistency of the stock, and in the water supply.—A. P.-C.

K-12. Process of Mixing Paper Stock. Max Wenzel. Ger. pat. 370,422. Papierfabr. 21, 186 (Apr. 1, 1923). Baffles are so arranged as to give a thorough mixing of the paper stock just before it flows on the paper-machine wire, also permitting more fibers to be deposited perpendicular to the machine direction.—J. L. P.

K-13. Paper Pulp Recovery. L. M. Booth. Paper Trade J. 76, No. 8, 54-55 (Feb. 22, 1923); Paper 31, No. 19, 11-13 (Feb. 28, 1923); Paper Mill 47, No. 9, 18, 42 (Mar. 3, 1923); Paper Ind. 4, 1701-1703 (Mar. 1923). After briefly discussing fiber loss in white water, the author describes the Booth recovery process and extolls its merits. It consists essentially in assisting the sedimentation of the suspended fiber and filler by means of "Boothal", (which contains sulphate of alumina and an alkali) which is added in the powdered form. A 97 per cent. stock recovery is claimed; and also that the recovered product is so uniform that it can be fed back directly into the paper machine head box. Covered by U. S. pat. 1,443,454, Jan. 30, 1923.—A. P.-C.

K-12 The Care of the Wire. Wochbl. Papierfabr. 53, No. 43 (1922); **Paper Ind.** 5, 311-313 (May 1923).—Practical advice, especially as regards the wear caused by improper adjustment of the suction boxes.-A.P.-C.

K-12 K-13 New Shower Reduces White Water Losses. FRED NAEGELI. **Paper Ind.** 5, 345, 347 (May 1923). A brief description of the reduction in losses effected by adoption of the Dezurick Shower Spray, which allowed of using white water for sprays. -A.P.-C.

K-12 Paper Machine. F. J. MARSHALL. U. S. pat. 1,445,782, Feb. 20, 1923. — The machine wire and the press felt are combined with a transfer belt which is arranged between them and which is adapted to pick the web of paper from the under side of the wire and transfer it to the press felt.-A.P.-C.

K-12 M-6 Application of a Quick-Acting Regulator to Paper Machine Drive. V. SYLVESTRE. **Papeterie** 45, 262--269 (Mar. 25, 1923); **Papier** 26, 335-343 (Mar. 1923). — A description of the Leonard system for driving the variable speed portion of the paper machine by means of a direct current motor and of the Brown-Boveri quick-acting regulator for keeping the speed constant within 1%.-A.P.-C.

K-12 Press Rolls with Channeled Surfaces. Aktiebolaget Karlstads Mekanska Verstad. Ger. pat. 363,780. Woch bl. Papierfabr. 54, 617, Mar. 3, 1923. The width of the channel is less than 1 mm. and its depth is somewhat less than its width.-J.P.L.

K-12 Sectional Electrical Paper Machine Drive. Compagnie Francaise Thompson Houston. Fr. pat. 547,830.-A.P.-C.

K-12 Paper machine Apron. P. E. DUDLEY and H. BOICE. U. S. pat. 1,441,332. Jan. 9, 1923. A fabrikoid (Textile fabric impregnated with a pyroxylin composition) apron is used. A.P.-C.

K-14 Drive for Calender. J. H. WHITEHOUSE. U.S. pat. 1,440,193. Dec. 26, 1922. The drive is designed to provide a relatively low speed for threading the paper through the machine, and a relatively high speed for normal operation. To do this with great efficiency and in a manner that does not require particular accuracy in the initial adjustment and which will economize floor space link-belt or silent chains are largely used instead of spur gears. A primary motor drives the calender for normal full working speed; and a secondary motor is arranged to operate when the primary motor is not running to drive the armature shaft of the primary at a relatively low speed, thus effecting a low speed drive for the calender for threading in the paper.-A.P.-C.

K-12 Elimination of Froth on Papermachine Wires. P. K. BAIRD. U. S. pat. 1,442,848. Jan. 23, 1923. — Same as Can. pat. 222,767. See **Pulp and Paper** 20, 1056 (Nov. 30, 1922). **Paper Trade J.** 75, No. 18, 55, Nov. 2, 1922.-A.P.-C.

K-12 Felting Fibers on the Papermachine at high Speeds. F. W. MONAGHAN. Can. pat. 213,968, Oct. 25, 1921; Eng. pat. 181,140, Mar. 16, 1921.—A strong and satisfactory web of paper can be made at high speeds (eg., 1,000 ft. per min.) on a Fourdrinier or similar type of machine by feeding the water and stock on to the machine under pressure, and providing means whereby the stock, after passing under the slice, accumulates in a pool, through which the rate of flow of the stock is approximately equal to the speed of the wire. The desired velocity is imparted to the stock by using more water than usual, and suitably adjusting the pressure head in the flow box. The pool may be formed by extending the apron over the machine wire for short distance or by placing the slice behind the axis of the breast roll. Difficulty may be experienced when running at high speeds in removing the water from the web; in such cases the suction box end of the wire should be raised to give the water more opportunity for draining away. The main feature of this process is that by maintaining a pool of stock above the wire the fibers become well mixed and give a well felted sheet.-A.P.-C.

K-14. Method of Applying Distinctive Marks to Paper. Kothe, Prinzhorn and Schiff. Fr. pat. 549,970. The finished paper is subjected to a pressure of about 2,000 lb. per sq. in. between a plain surface and one which has a suitable design in relief, the edges of the design being rounded as much as possible to prevent damaging the paper. — A. P.-C.

K-14. Waste in the Finishing Room. W. T. Schenk. Paper 31, No. 25, 15-16 (Apr. 11, 1923). A discussion of various means of preventing waste of good paper in the finishing room.—A. P.-C.

K-14. The Reduction of Broke Losses. H. P. Carruth, F. J. Morrison and Robt. Herron. Paper Trade J. 76, No. 15, 1559-161 (Apr. 12, 1923), Paper Ind. 5, 138-142 (Apr. 1923). The authors conclude that, the paper maker is the most important factor in reducing broke, control of consistency, freeness and character of stock, as well as correct furnish percentage and measurement of materials, is essential; the mechanical condition of every integral part of the paper making machinery is a large contributing factor and periodical inspection should be made to keep it in perfect running condition; operating records when properly presented to the machine crews usually result in better quality and higher efficiency; the conversion or manufacturing cost is an effective instrument to emphasize the importance of broke losses to operating men and to the management.—A. P.-C.

K-14. A Study and Comparison of Methods of Slitting and Rewinding Rolls of Paper and Board. James Cameron. Pulp and Paper. International No. 107-113 (Dec. 1922). A description of the development of winders from "Multiple Shaft, Center Wind" system, to the "Two Drum and Riding Roller, Surface wind" system, with score cutter either on front winding drum or on separate roll below the front drum.—A. P.-C.

K-15. Steam Utilization in a Modern Newsprint Mill. S. W. Slater and J. E. A. Warner. Pulp and Paper 21, 120-126 (Feb. 1, 1923). Pulp and Paper 20, 2027 (Dec. 21, 1922). Paper Trade J. 75, No. 26, 57 (Dec. 28, 1922).—A. P.-C.

K-20. Washer for Parchmentizing Machines. Rube. Fr. pat. 545,967, Jan. 16, 1922. Papeterie 44, 1131-1132 (Dec. 25, 1922). The spray pipes and water lines leading to them are so arranged that the parchmentized paper is easily accessible.—A. P.-C.

K-23. Machine for Reinforcing Paper by Means of Threads. Victor Lorin. Fr. pat. 539,822. Mon. Papeterie francaise 54, 10-12 (Jan. 1, 1923). The patent describes a machine for forming a network of any suitable thread, which is passed between two rolls between which also passes a web of paper (or two webs if desired), the surface in contact with the threads being coated with a suitable adhesive.—A. P.-C.

K-0. Letters of a Paper Maker to his Son. Anon. Wochbl. Papierfabr. 54, 1368-1369 (May 19, 1923); 1434-1436 (May 26, 1923). A discussion of the manufacture of paper mostly from the standpoint of power.— J. L. P.

MILL EQUIPMENT

M-8. Comparative Tests of Rotating Stock Pumps. M. Scherrer. Wochbl. Papierfabr. 53, 2919-2922 (1922). Paper 31, No. 14, 7-10 (Jan. 24, 1923). From experiments described in the articles, the author draws the following conclusions: Stock is best handled at a consistency not exceeding 3 per cent. With higher consistencies pumping conditions can be slightly improved by increasing the head. With consistencies higher than 3 per cent, the rate of delivery for a given consistency is greater groundwood than for chemical pulp. Up to 3 per cent. consistency, centrifugal pumps work more efficiently than spiral pumps; and above 3 per cent. consistency there is practically no difference between the two. The spiral pulp may be preferred to the centrifugal pump for raising large amounts of stock to a small height; but under practically all other paper mill conditions the centrifugal pump is preferable.—A. P.-C.

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was first propounded by Mr. Taschereau. Consequently, as I said before, we must not take any recantation on the part of the Premier too seriously. An explanation, sooner, or later, will doubtless be forthcoming.

I am glad to know that my suggestion as to an embargo, even at first blush, seems a reasonable means of conserving our pulpwood resources to a critical St. John newspaper. This journal states that only 12 per cent. of the pulpwood used in the making of paper in the United States is cut from Canadian land, but as a matter of fact out of a total consumption of pulpwood by United States mills of some 5,500,000 cords, Canada will probably export to that country the coming year nearer forty per cent. with a possibility of its reaching fifty per cent. Many American paper mills have shut down woods operations in their own country and are bleeding Canada white, a fact which makes the dalliance of the Canadian Government in dealing with the issue little short of criminal.

The argument also advanced by this journal that it would be as reasonable to place an embargo on wheat as on pulpwood is, to say the least, facetious. Wheat is a crop of which there is a world surplus, while of wood there is a world shortage. Wheat can be raised in one season, while trees take from fifty to one hundred and fifty years to produce. The same newspaper asks why try to force the growth of the paper industry in Canada when, by natural processes, it is bound to grow any way. Well, I ask in all seriousness, whether the "natural process" would not be to allow insects and fire to destroy and our increasing exports to diminish our wood supply to such an extent that it would not only be impossible for it to grow but under this "natural process" the industry will instead only too soon have to curtail.

The main reason for the disinclination on the part of the American paper manufacturer to move his mill to the Canadian side is patriotic. He prefers to manufacture our raw material in his own country, thereby giving employment to American labour as well as increasing American dividends and reducing American taxes at Canada's expense, and in this worthy cause he is being ably assisted by our Canadian Government.

The newspaper further offers the gratuitous suggestion that "Mr. Barnjum would be well advised if he were to confine his praiseworthy efforts to prevent the immense waste of Canadian forests by fire." My reply to this suggestion is that when I see the Liberal Government at Ottawa take the only action that will produce a large measure of immediate conservation of our forest resources without the expenditure of one dollar of the people's money, namely, by the simple process of passing the Order-in-Council prohibiting the export of unmanufactured wood, I shall then be ready to devote every moment of my time and every dollar at my command to an endeavour to prevent our appalling forest fire losses. But I fail to see any sound logic in expending time and money in protecting a wood supply merely so that it may be exported for the benefit of another country.

FRANK J. D. BARNJUM.

Montreal, September 24th, 1923.

Eternity cannot straighten a crooked day.

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Reservation of the Home Market

The idea that man's progress depends on competition is another fallacy. His desire to improve his condition of life is a sufficient spur. The primary cause of progress lies in the initiative of individuals. Were this not true, those nations which have protected their home market from competition would have retrograded. They have on the contrary, advanced, and to a much greater extent than Great Britain, under Free Trade. Lack of a home market strangles those industries which are most subject to competition—the skilled industries which yield the highest wages and the highest profit. In place of wasteful competition, the Empire must adopt co-operative production. The organization of production is possible, however, only if the extent of the market is ascertainable, and only if markets are reserved. Great Britain must reserve the home market first to itself, secondly to the Empire, whether it concern agricultural produce or that of skilled industries. On the other hand, if other countries will perform the unskilled work for the Empire, so much the better.

Great Britain will give preference to the Dominions, and the latter to Great Britain, by admitting freely just that quantity of commodities which is required. Only where the Empire is not self-supporting will foreign goods be allowed to enter at all.

The fiscal policy of Great Britain is not a domestic concern. No sound economic policy for the British Empire is realizable without the reservation of her own markets by members of the Empire, and without forbidding the practice of buying in the cheapest market. Free Trade is the application of *laissez-faire* to the exchange of goods. Applied to production, *laissez-faire* prevents its organization, and prevents the establishment of co-operative production. The stabilization of the Empire's production necessitates abandonment of the policy of *laissez-faire.**

*On June 13, 1923 the Provisional Emergency Cotton Committee addressed a letter to the Federation of Master Cotton Spinners' Associations in which it advocated the establishment of an Advisory Board, consisting of representatives of spinners' manufacturers' and operatives' organization. This letter went on to say that "once this body is formed, statistics could be obtained which would enable the production to be scientifically regulated to the demand, and the means would be in existence for bringing the whole trade into line and securing profitable conditions."

Coming from the most faithful adherents of a **laissez-faire** policy this conversion to common-sense is noticeable.

—J. S. H.

GROWING EXPORTS OF PULPWOOD TO U. S.

During the six months ending September, Canada will have exported to the United States approximately as much pulpwood as she did during the whole of the fiscal year 1916. In that year the exports were 879,734 cords, for the five months ending August this year they were 700,716 cords, and at the rate of export maintained during the last three months, they should come very near to the total for the whole fiscal year 1916. In August alone these shipments were 163,411 cords.

Insofar as value is concerned the shipments made during these six months will have quadrupled in value those for the year 1916, for whereas the latter were worth $5,743 000, those for the six months of this year will, at the present rate of exportation, exceed $24,500,000. All this, of course, went to the United States.

As an indication of the extent to which the United States is dependent on Canada for pulp, newsprint and pulpwood, it may be said that whereas during the fiscal year 1916 she took $31,000,000 worth at the present rate her purchases of these during the current fiscal year should total $150,000,000.

PULP AND PAPER NEWS

Following out the policy of developing the water powers of the Province, the Quebec Government will offer for sale by auction a water power known as the Chute de la Cheminee on the Batiscan River, Champlain County, 15 miles from Three Rivers. This is in addition to the three powers on the Megiscane River. The development of water powers usually involves the extension of the pulp and paper industry.

Mr. C. Howard Smith, president of the Howard Smith Paper Mills, Limited, is a member of the executive committee for raising in Montreal $100,000 for the Canadian Red Cross Japanese Relief Fund.

By an Imperial Ordinance, dated September 17, a number of articles can be imported into Japan free of duty until March 31, 1924. These include writing paper, drawing paper and wall paper.

The improvement of the harbor at Three Rivers, P. Q., is of interest to the pulp and paper industry, that city being the central point of pulp and paper making in the Province. As the result of a meeting between the Marine & Fisheries Department and representatives of the habors of Montreal, Three Rivers and Quebec, it has been decided to ask Parliament to grant $1,000,000 to be expended on extending the wharves at Three Rivers and equipment for loading and unloading. It is also proposed that the Canadian National Railways connect the main line between Montreal and Quebec with Three Rivers. A branch would be built from St. Baruable a few miles west of Shawinigan Falls to Three Rivers, passing the St. Lawrence Paper Mills on its way to Three Rivers.

Arguments in favor of a higher tariff were put forward by Mr. C. Howard Smith, president of the Canadian Manufacturers' Association at a meeting of the Association held in Montreal on September 27. He pointed out that Canada had one of the lowest customs tariff in the world, with repeated reductions in past years. He said that this lowering of the tariff had failed to fulfil the predictions of those who favored it—the result in fact had been disastrous for Canadian business. "We do not ask that the British preference be cancelled," said Mr Smith. "We urge that, in justice to Canada, the time has come when trade preferences should be made on a basis of bargaining, giving trade favors when we get equivalent favors in return. But, unfortunately, the Canadian tariff has been reduced to such a point that opportunities for further concessions are hard to find. The first step should be a substantial increase in the general tariff. This would automatically increase all existing preferences given by Canada, and enable us to offer new valuable preferences in exchange for trade privileges.

Canada can prosper and pay her debts if she adopts a sound policy of national development. That policy must provide a tariff which will cause the country's raw materials to be manufactured within the country into finished products. The present tariff is not sufficient, and it must be raised.

Work has begun on the construction of the new pulp plant of the Great Lakes Paper Co., at Fort William. The ground was broken last week and a large force of men are laying tracks and making ready for recovering material.

The output of the Lennox Paper Mills, Ltd., Camden East, Ont., which recently began the manufacture of book and envelope paper and specialties, is about ten days daily. Harry Dunlop, who was formerly connected with the Don Valley Paper Mills, has been appointed superintendent of the plant.

Bradshaw's Limited, 107 Atlantic Ave., Toronto, are removing to their new building in the northwest section of the city where they will have greatly increased room and will add considerably to their equipment. The company manufacture plain and printed wax papers in sheets and rolls and specialty roll printing and slitting confectioners' specialties.

Spencer Portal, of the Laverstoke Mills, Hampshire, Eng., manufacturers of fine bond, ledger and bank note paper was in Toronto last week calling upon the trade.

J. B. Piper, of the Provincial Paper Mills, Limited, Toronto, spent a few days last week calling upon the trade in London and other points west.

H. C Hunter, general superintendent of the Ontario offices of the Employment Service of Canada, reports that arrangements are being made for the reception of a colony of Danes who will cut pulp wood under contract. The immigration officials and the Department of Labor are co-operating in this matter, the Danes who have arrived so far are a splendid type of men.

The Interlake Tissue Mills Co., Toronto, who are offering valuable prizes in the Christmas tree screen contest, made from colored crepe tissue papers, report that much interest is being aroused in the competition, which closes on December 1st. The size of the screen upon which the artificial tree is mounted, must be five feet wide and eight feet high. The object of the contest is to offset unnecessary waste in cutting trees from the natural forest and make Christmas screens take the place of real trees. The Christmas tree screen may be hung in any convenient corner and a receptacle for gifts placed behind the screen. The cash prizes are $25 for the best screen submitted, $15 for the second, $5 for the third, and in addition there are five prizes of one dollar each.

Hon. G. Howard Ferguson, Premier of Ontario, and party, who returned from an extended trip to Moose Factory on James Bay, says that the country is, for one hundred miles beyond the Transcontinental railway, known as the northern clay belt. Along the banks of the rivers they found much merchantable timber. The area further north and extending to James Bay is called the coastal plain and, in this district, there are immense areas of swamp, muskeg and dwarf timber. Only a small portion of this timber is of commercial value and the cost of operations would be high. From an operating standpoint, Mr. Ferguson said the problem would be where the mills could be most advantageously located. Logs will not float up stream and as these waters all drain into James Bay, it means that the wood must be floated north to a central point and there manufactured and the finished product brought out by rail. The fact that all the foliage, except evergreen, had turned color owing to the frost, enabled the party to size up the timber and pulp wood situation better than if the trip by air plane had been taken earlier in the season.

The regular monthly meeting of the Toronto Club of

Printing House Craftsmen was held at the Board of Trade Rooms, Toronto, on September 26. The delegates, who attended the recent convention in Buffalo, presented interesting reports on the gathering. M. A. Sorsoleil, organizer and director of vocational high schools, was the speaker of the evening and his remarks on "Education, an Indispensable Asset for the Printer" was much appreciated by the representative assembly, while the entertainment features were right up to the mark.

Edward O'Keefe, of Appleton, Wis., engineer of the Great Lakes Paper Co., has arrived in Fort William to take charge of the construction work on the new mill of the company.

The action of Hon. J. Lyons, of Sault Ste. Marie, Ont., in writing the pulp and paper companies in Northern Ontario asking that they pay settlers as much for their cut of pulp wood as it costs the companies to take the product off their own limits, and to purchase as large supplies as possible from the settlers and conserve their own limits as far as possible, is being endorsed on all sides by those who believe in the conservation of forest resources. The Ontario Minister of Lands and Forests has received many congratulatory letters on the stand that he has taken, which has not been followed with any sense of dictation but with a sincere desire to bring about a closer relationship between the mills and the pioneers of the north.

The total vote polled in Brompton, Ont., in connection with guaranteeing the bonds of $20,000 for Gummed Papers, Limited, resulted in 313 for and only 43 against the bylaw. This means that the company will now proceed with the extension to its premises and the installation of additional equipment.

A provincial charter has been granted to the Shuniah Development Co., with headquarters at Port Arthur and a capital stock of $300,000 to carry on various enterprises and to conduct the business of a land organization.

At the annual meeting of the Spanish River Pulp and Paper Mills held in Toronto last week, the report for the past year was presented and the old officers and directors were re-elected for the coming year. President Mead stated that the forest fires of the past season had done very little damage to the limits of the company. There had been a few small fires but none of a serious character. The most of the wood partially burned could be used by the company in its various processes. The President also stated that the Spanish River Co. and the Ontario Government were taking every precaution to guard against conflagrations and he paid a tribute to the co-operation afforded by the provincial administration. The company was making every effort to conserve the growing timber to the fullest extent in order that the supplies available might be perpetual for the usage of the organization and its plants. The present output of the company's mills is seven hundred tons of news print daily, an increase of fifty tons during the past year.

It is understood that a decision has been definitely reached to double the output of the Fort William Paper Co., Fort William. The expenditure will be between three and four millions dollars and production increased to 400 tons daily of newsprint. The plant, as it now stands, represents an investment of $4,000,000 and gives employment in the bush and mill operations to about 1,000 men.

NEW BRUNSWICK NEWS

Editorials in some of the newspapers of the Maritime Provinces have criticised Frank J. D. Barnjum of Montreal and Annapolis Royal, N. S. for what is termed "bombarding the newspapers with criticisms of the members of the Royal Commission appointed to look into the question of an embargo on pulpwood." Mr. Barnjum has not modified his aggressive plan to secure the embargo, caring little whether he steps on the toes of his opponents or not.

A number of pulp and paper executives of New Brunswick were in attendance at the convention of the Engineering Institute of Canada, held in St. John, N. B. September 26 and 27.

Not a vestige of the old pulp mill at Mispec remains the buildings having been razed. This pulp manufacturing industry was founded twenty-two years ago, by a St. John, N. B. group. After operation of but a few years, the mill was closed, having been a financial failure. The industry was a small one, the power being secured from the Mispec falls at the mouth of the Mispec river. A sheer and very dangerous cliff now extends from the highway of the river. But for the parts of bricks beheld in profusion on the ground, little remains to connect the site with the mill.

One of the most imposing buildings in Fredericton, N. B. is the Fraser Memorial Building, erected to perpetuate the memory of the late Donald Fraser, one of the founders of the pulp and lumbering concerns bearing the Fraser name. The building is large and will be devoted to activities of a semi-public nature, as stipulated in the will of the late pioneer pulp manufacturer and lumberman.

SPANISH RIVER ANNUAL

Proceedings at the annual meeting of the Spanish River Pulp and Paper Mills, held at the office of the company in Toronto last Friday, were strictly formal in character. Over 80 per cent. of the outstanding stock was represented either in person or proxy. The annual report and balance sheet were unanimously approved.

President George H. Mead, who occupied the chair, stated, in reply to a question, that the fire losses of the company during the past season had not been of any consequence. Even burned woods could be used for the company's purposes, so that the actual loss was negligible. He intimated that the Spanish River Company and the Provincial Government were taking every precaution to guard against forest fires, and he paid a tribute to the co-operation afforded by the Government. He added that the company was expanding efforts to conserve the growing timber to the fullest extent, in order that the supplies of timber available for the company's usage might be perpetual. Surveys conducted indicated that the company could be assured of an abundant supply for all time, provided present plans for safeguarding timber resources were carefully worked out and followed.

The former board of directors and officers were re-elected without change.

ST. LAWRENCE PAPER

The St. Lawrence Paper Mills, Ltd., of Three Rivers, has no interest in any deal for the acquisition of the pulp mill formerly owned by the Nipigon Pulp & Fibre Co., according to a statement by an official of the company. The statement was made in denial of a press despatch from Port Arthur. It is stated that negotiations have been entered into by the Guaranty Investment Corporation, Ltd., with which the St. Lawrence Paper Mills, Ltd., have no connection.

The wood rosser never barks up the wrong tree. (Ed. Note: Neither does the cant dog.)

UNITED STATES NOTES

Arthur J. Stevens receiver of the bankrupt Parsons Pulp and Paper Company of West Virgina, has been authorized by United States Judge Baker to accept an offer of $337,117 by a group of New York bankers, headed by C. W. Weston, for the unmortgaged assets of the company. The same group of bankers had previously purchased the real estate of the company, which has holdings in West Virgina, Virginia and North Carolina with an estimated value of $2,000,000.

According to statistics of the United States Department of Commerce, exports of paper from the United States showed a decline in July, and were the lowest since last February. Compared with July, 1922, however, exports have held up well, and with the exception of newsprint, wrapping paper and a few minor items, show fairly substantial increases. Paper exports as a whole reached a value of $2,079,267, as compared with $1,994,165 in July of last year.

A report from Consul L. A. Davis, Helsingfors, states that paper manufacturers in Finland have been complaining for some time that the market prices for most kinds of paper have fallen so low that they do not seem to meet the costs of production, and machines in seven of the mills have been shut down. The low prices in the world markets have resulted also in the reduction of prices in the Finnish domestic market. The price for newsprint has been reduced and there also have been reductions in the prices of other grades of paper. While the exports of mechanical pulp during June, 1923, were considerably less than those during the preceding month, the situation in the market for this product has not changed to any great extent. The exports for sulphite pulp dropped to less than half those of May.

Distributers of products of the Strathmore Paper Company gathered at Woronoco, Mass., last week for the third annual meeting of what has become known as "Strathmore Town". Delegates representing every Strathmore distributing center and agency were on hand for what proved to be the largest meeting of its kind ever held. Talks featuring many interesting topics were given. Advertising and sales, however, were the main points for discussion. Entertainment features included a clam-bake, golf and visits to the Eastern States Exposition. Lou Colton of the Zellerbach Paper Company came out ahead of other candidates in a lively contest for the "Townships" mayoralty.

Following refusal of the Michigan Securities Commission to issue a permit for a proposed issue of stock, the recently formed El-Nora Lee Paper Company, Kalamazoo has announced its dissolution.

The outlaw strike of pressmen on New York City daily papers came to an end last Saturday and beginning Monday the issues of nearly all papers again appeared in normal size. Their individual appearance was resumed several days earlier when out-of-town pressmen began to take the places of the strikers. The difficulty ended when the majority of the pressmen decided to return to their places as individuals and to accept the terms of the publishers. Newsprint consumption, which was materially curtailed during the week or more of lean daily issues, has swung upward to nearly normal, and it is only a question of a very short while before the presses again will be humming in the endeavor to keep close to usual huge daily runs.

The Melchior Paper Company, Philadelphia, has placed two new specialties on the market. One is a reinforced waterproof tape which is stronger and cheaper than cloth. The other is a moisture proof gelatine, called "Excelo-Wrap," adapted to the making of attractive and durable packages.

The Northeastern Division of the American Pulp and Paper Mill Superintendents' Association meets this Saturday at Groveton, N. H. at the Eagle Hotel. The program calls for a business meeting in the morning, luncheon, a visit to the Groveton Paper Company's plant, lectures and a discussion in the afternoon. The meeting will be concluded with a complimentary banquet to the members and their wives.

A report just received at the office of H. B. Wadsworth, Japanese importer and exporter, indicates that he is safe in Japan. At the time of the earthquake he was in Tomakomai, outside of the danger zone. It is learned, however, that several paper mills were damaged, although all properties of the Oji Paper Manufacturing Company, the largest concern of its kind in Japan, escaped damage.

CHICAGO FALL BUSINESS CONFERENCE

Salesmen's Day, Wednesday October 10, 1923.

The American Paper & Pulp Association has arranged its usual Fall Conference in conjuction with its affilisted Associations, one of these being the Salesmen's Association of the Paper Industry. While one of the youngest, this is one of the most aggressive of the Service Associations, and has always made a very good showing at this fall conference.

This year Salesmen's Day has been changed from Tuesday to Wednesday October 10th, and already advices have come from all over the country that Salesmen will attend in very large numbers. This is understandable in view of the fact that the business recovery up to the present has not been as vigorous as was expected, although everybody is still optimistic about fall business. However, being optimistic is not being sure, so everybody is anxious to get to Chicago and to discuss business conditions, also to hear prominent men discuss them.

On Salesmen's Day a Business Luncheon has been arranged, which will be held in the Club Grill at the Drake Hotel, Chicago, on Wednesday October 10th, at 12 30 p.m. Following this luncheon Dr. E. C. Merchant of the G. H.Nead Company will give a talk of about twenty minutes, illustrated with charts on "Trade Statistics". Dr. Merchant is one of the few men able to talk interestingly on what is usually considered to be a dry subject, using the word "dry" in a literal sense, of course. He is well known in the paper industry, and has been chosen to address this luncheon because of numerous requests to hear him.

After his address a Business Meeting of the Association will be held, so everybody who is interested in this Association will attend this luncheon. In order to make progress these days, it is not only necessary to do what one has to do, but also to put in a little overtime if the Association which is working for its members, is to make progress in its efforts for their benefit, and for the benefit of their industry, so please attend this Business Luncheon. You won't regret it.

The big "Social" event of the week, will of course be the "Salesmen's Banquet", arranged for 7 p.m. on Wednesday October 10th, which will be held in the Big Ballroom of the Drake Hotel. Tickets can be obtained from Mr. Thomas J. Burke, Secretary-Treasurer of the Salesmen's Association, and should be obtained as early as possible, because a large number have already signified their intention of attending, and we cannot sell more than 500.

Through the efforts of the Chicago Committee, assisted by Dr. Hugh P. Baker of the American Paper & Pulp Association, the Salesmen's Association has secured Mr. George E. Roberts, Vice President of the National City Bank, as the principal speaker at this banquet. Mr. Roberts who is an Ex-Director of the Mint, also knows something of paper, as he at one time learned the printers' trade, and was proprietor of the Fort Dodge Messenger, also State Printer of Iowa. He is also well known in Chicago, having in 1907 to 1910 been President of the Commerce National Bank of that City. He has written several books and numerous magazine articles and pamphlets upon a variety of subjects. He is as a matter of fact, greatly interested in the subject of Economics, and was one of the leaders in the formation of the American Bureau of Economics Research. His subject "General Business Conditions", cannot fail to interest everyone of us, in view of the necessity for understanding business conditions at a time when we are all endeavoring to ascertain what is ahead of us.

Another speaker at this Banquet, who is better known to the members of the Salesmen's Association and to the Paper Industry at large, than many others perhaps more closely connected with the industry, is our Chaplain Rev. Dr. George Craig Stewart. It is worth while going a long way to hear him.

THE TWO NEW ORGANIZATIONS OF THE BOX BOARD INDUSTRY

Perhaps there is no industry in the United States which is so well blessed with trade associations as the paper industry, says the "Daily Mill Stock Reporter." One reason for this doubtless is that the paper industry is really a combination of many units, each of which has its organization and thereby making for quite a number of different trade bodies within the one industry.

Recently two new organizations have been established. One is the Boxboard Research Service, which has been organized by Charles R. White, hitherto secretary of two former organizations of box board manufacturers, which will have as its purpose the compiling and distributing of statistical data relating to board production, sales, raw material stocks, etc. The other new trade body is the Paper Manufacturers' Exchange, which is said to be the first industrial exchange ever established in this country and which will function along the lines of commodity exchanges with branches in Chicago, New York and San Francisco.

It seems somewhat significant that both of these two new trade organizations are specifically related to the box board industry. The Boxboard Research Service will function solely within the board industry, while the Paper Industries Exchange apparently will be closely identified with the board industry. George W. Gair, president and general manager of the Robert Gair Company, among the largest producers of box board in the country, was a prime factor in the organization of the Exchange, and it is obviously expected that board, along with paper, will be accorded much attention in the operations on the Exchange.

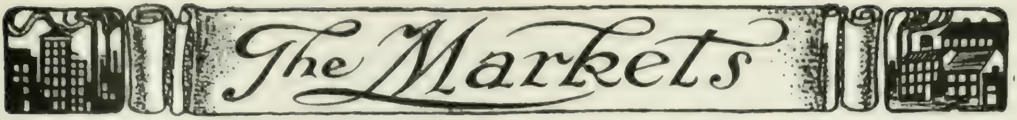
There is no doubting that trade associations are helpful to the memberships they serve. There are many trade associations in the United States, and, by and large, they are perfecting a service of great benefit to industry and to the country. Some of them, however, overstep the limit in their efforts to give service, and, instead of building up through helpful co-operation, they tear down by the dissemination of information which stifles competition. If the two new trade organizations just established in the board and paper industry desire to they can be of meritorious service to the clients they cater to; if, however, they practise unfair and illegal tactics in the compiling and distributing of statistical information which the laws of the land prohibit, they can wreak a great deal of harm to the industries they serve and to affiliated industries.

It would appear, judging from the establishment of two new trade organizations in the board industry within a space of several weeks, that board manufacturers, following the Supreme Court decision which not a stop to the Armstrong Bureau's system and character of statistical service for board producers, are groping about seeking some way out of the dilemma they found themselves in after the ruling of the highest Court in the land was handed down showing that the operations of the Armstrong Bureau were illegal. Box board manufacturers doubtless want a trade organization for the compiling of statistical data which will help them in the conduct of their business, and seemingly they are experimenting in several directions with this end in view. It is to be hoped that they will accept the warning embodied in the recent Supreme Court decision applying to trade associations, and see to it that their newly established trade organizations do not go too far in the gathering and dissemination of information which, while benefiting themselves probably, would act as a detriment to and a hardship for other groups of business men affiliated with the board industry.

A NEW CONTROLLER VALVE

The Bristol-Fuller controller valve for air and gas or air and oil, in its several styles and sizes, is illustrated and described in Bulletin 319, which will be sent on request by the Bristol Company, Waterbury, Conn.

Moths, known to the trained woodsman as lodgepole needle miners, have killed thousands of acres of forest in the Yosemite National Park. For over sixty square miles from a point east of Lambert Dome in Tuolumne Meadows the devastated area extends beyond Snow Flat and Porcupine Flat on the Tioga Road.



The Markets

CANADIAN TRADE CONDITIONS

Montreal, October 2. The position in Montreal has not changed to any extent during the week. The slight improvement recently noted is maintained, and although business cannot be described as rushing, it is, on the whole, fairly satisfactory. In some lines it has picked up to a considerable extent. A still larger volume of buying may be reasonably anticipated as the winter approaches.

The recent reports by pulp and paper companies show that the industry is on a substantial basis. The profits have not been of course on the war scale, but they are sufficient to give a moderate return. More and more attention is being given to the forest reserves of the Companies, and it is significant that the directors are alive to the absolute necessity of prospecting their limits from fire. The lessons of repeated and heavy losses are being heeded, and we may confidently look to the companies taking more aggressive action in the matter of minimizing the losses by fire.

Preparations for newsprint contracts for 1924 are now being made. The indications are that the price will not be altered, the companies preferring to absorb any additional costs rather than the risk of disturbing the market and of diminishing the demand. Arguments in favor of a higher price could be advanced, but against these must be set the fact of further tonnage coming on the market and the necessity of finding an outlet which would be rendered more difficult if the price was boosted. The Canadian mills have always favored a stabilized market, and conditions which will make for steady production.

The export figures for August show that out of the 104,558 tons sent abroad, the U. S. A. took 103,347 tons. New Zealand 533, Australia 224 and British South Africa 333. In August 1922 the United Kingdom bought 3,500, and Australia and New Zealand 4,330 against 750 this year. For the eight months the exports totalled 748,292 tons, a gain of 21 per cent. as compared with 1922. Canadian mills are out of the British market this year, while Australia shows a great falling off, 5,667 tons against 23,234, New Zealand is stationary, and British South Africa a slower buyer.

Although the exports of book bond and writing paper for the eight months of this year are well ahead of those for the same period in 1922, the figures for August are not as good as in August, 1922. For instance, book paper shipped in that month this year totalled 396,700 pounds against 668,400 pounds, the falling off being due to smaller purchases by Australia and New Zealand. In bonds and writings, the total was 103,400 pounds against 130,100 pounds, Australia and New Zealand purchased more freely, but against this the United Kingdom dropped out of the market. For the eight months the exports increased nearly a million pounds. Wrapping paper (kraft) was sent abroad in August to the extent of 1,829 tons, a slight falling off, smaller demands by some countries being met by increases by others.

In pulp, the groundwood market is still very firm, the demand being more than equal to the supply. During August the exports to the States increased by just over 4,000 tons, those to the U. K. declined by 1,000 tons and to France by 900 tons. Sulphite is slow, with prices a little weaker. In August the exports increased considerably owing to better buying by the States, the U. K., and France. Bleached is unchanged. Shipments in August were smaller by 2,000 tons, largely owing to the decreased requirements of the States. Sulphate exports increased by nearly 2,000 tons.

Ontario Market News

There are no new features to report in general market conditions except that jobbers say that trade is gradually getting better, in most lines. It is still spotty but the trend of business is in the right direction. Reports received from the mills, especially those making fine paper, are to the effect that the machines are kept busy but mostly on orders that require filling without delay. The mills have not business booked ahead for weeks as they usually have at this season of the year. Jobbers report the same condition and declare that the majority of the business placed is wanted at once. On the whole distributors are much better stocked up than printers and other consumers, who hestitate, during the present period, to buy beyond actual needs.

Business in the waste paper and rag line is very good and there are a few changes in prices, some up a few cents and others down. Collections have not been so heavy during the past few days as they were some time ago but, with chillier weather, it is expected that they will pick up.

Manufacturing stationers are doing a lively trade and all their travellers are now out on the road and report encouraging business in some centres. The envelope line continues fair but most plants have their ups and downs and say that big orders come in one week to be filled and the next week is rather quiet.

In the toilet and tissue arena, there is a fair turnover and mills are running with business from ten days to two weeks ahead. There has been no changes in prices on any line and quotations continue firm. Paper box plants report more orders than they have had for some time and look for an even better state of affairs during the coming month.

Newsprint is still active and remains the most productive part of the trade. Shipments are going forward in good style and the question of price for next season is engaging the attention of consumers and mills. It is thought there will not be any change as the relations of producers and users are now on a satisfactory basis and, if the demand keeps up, there is no perceptible obstacle on the horizon.

A large quantity of pulp wood will be cut by contracting companies and others in Northern Ontario and the help problem is still acute but will be relieved to some extent when outside contruction work ceases and the harvesters return from the west. Good wages are being offered and the cities scoured for bushmen.

The pulp situation continues strong so far as ground wood is concerned and prices range all the way from $42 up at the mills. Some sales have been recently made as high as fifty dollars at the mill for special lots and quick delivery. In other lines of pulp the demand is a little easier and prices are about the same.

On the whole, the outlook for fall is promising and the paper trade should enjoy an increased turn over from now on. The printing trade is yet quiet but some concerns are getting busier Rural publishers are doing very well and there are few complaints heard.

NEW YORK MARKETS

New York, September 29—(Special Correspondence) There is no question but that some branches of the paper industry in the States are exceedingly active. This is particularly true of the newsprint section. There is also better than normal activity prevailing in the building paper branch of the industry. Bag papers are very active, and various specialties are enjoying a brisk demand of sufficient scope to keep mills making such papers busily engaged.

On the other hand, there is much room for improvement in some lines of paper. Generally speaking, the mills of the country are managing to keep fairly busy; most of them are operating at a good rate of capacity, but there are certain kinds of paper which stand out in the present market activity and which—in the other way around — serve to create a contrast in those grades in relatively slower demand.

Building papers of all kinds are moving freely. The tremendous increase in building operations throughout the country this year has led to a marked expansion in consumption of building paper, particularly sheathing papers and roofing felt. Mills producing these are busy and have been fully occupied for some time. Moreover there is every indication that they will continue to experience an excellent demand for their output since building operations will likely keep up until cold weather sets in and since the large use of these papers this summer has so reduced stocks that manufacturers will be called on to produce new supplies to replenish dealers' stocks.

There has been a marked expansion of activity in the bag paper trade recently. Probably the all important reason for this is the sharp rise in cloth values —both cotton goods and burlap, the two principal bagmaking cloths, having risen to high price levels— and the resultant use of paper bags in place of textile sacks. As an illustration of the activity in bag papers, a local dealer with an order from a customer for a lot of rope bag paper this week communicated with half a dozen paper mills making this description of paper and was told by every one of the manufacturers that the paper could not be shipped for two to four weeks owing to the mills being behind in deliveries. The probabilities are bag papers are due to enjoy a period of exceptional activity. There seems little likelihood of cloth values dropping for quite a while much below present levels, and if cloth bags continue at prevailing costs there is no doubt that tremendous numbers of paper bags are going to be used by consumers who ordinarily purchase cotton or jute bags.

Newsprint is in a firm market position. The strike of New York pressmen and the reduction in the size of local newspapers has thus far had no perceptible effect on the market. The strike has been settled. At a meeting last night the strikers voted almost unanimously to return to work Monday, and publishers will begin to print their usual issues next week. This week both afternoon and morning newspapers have printed issues of 16 pages each, which means that consumption of newsprint has been only about half or less than half of the customary tonnage in this city for the week.

Various estimates have been made of the approximate loss in newsprint consumption due to the strike of pressmen. It is likely that at least 500 tons of paper per day have not been consumed which would have been used with publishers printing normal issues. Estimates range from this figure up to 750 tons as a daily loss in consumption. Multiplying this by 14 — the strike has lasted just two weeks next Monday— and the loss in consumption would total between 7,000 and 10,500 tons. It is probable, however, that some of this loss will be made up as there is likely an accumulation of advertisements which the newspapers will carry in their issues during the next few days, thus necessitating the printing of larger-sized issues than would have been published otherwise.

Reports from the book paper branch of the industry are not too encouraging. Book mills are in many cases looking for business. Most of them are well engaged but they could readily accommodate additional orders, and salesmen have been sent out with instructions to land the business wanted. The consequence is that some shading of prices is being resorted to by manufacturers in their anxiety to corral orders. Machine finished book is quoted at 6.50 to 7.25 cents a pound f.o.b. New York, on an average, but the bulk of business transpiring is at the lower level. Coated book papers are rather steady though in some instances they are being sold also at slight reductions from the prices named by mills.

Fine papers are in fair demand and are holding their own in price. Since the decline in bleached sulphite some mills have lower quotations on wood bonds slightly but merely in keeping with the reduced cost of raw material. Wrapping paper is in routine demand and so are tissues, with no changes noted in quoted prices.

Box boards are moderately active and steady in price. Plain chip is quoted at $60a ton f.o.b. New York, and news board at $62.50 per ton.

GROUND WOOD. — Some improvement is reported in water conditions in pulp grinding districts, but if this improvement has had effect on the ground wood market, it is not observable on the surface. Reports tell of mechanical pulp continuing in just as strong a position as has been recently the case. Demand from consuming sources is brisk and there does not seem to be enough ground wood available to go around, and naturally under such circumstances of supply and demand prices rule very firm. Domestic producers are offering in a very sparse manner. Many of them are looking for ground wood for their own use and are buying instead of selling, and prices of domestic pulp are strictly nominal at around $40 a ton at grinding plants. Ground wood from Canada is bringing $45 to $50 a ton f.o.b. pulp mills in the Dominion, and dealers in New York appear to be readily disposing of all the supply they have to offer to consumers. It is argued by members of the trade that there is little probability of any serious recession in ground wood prices for some time to come even though water conditions should improve to a degree permitting grinders to materially increase their output, for the reason that grinders in general are sold well ahead and that it will take them a month or longer to catch up with orders.

CHEMICAL PULP. — It appears as if prices of chemical wood pulp are commencing to steady on fairly stabilized levels following the declines recorded in the different kinds of pulp recently. Apparently consumers are more willing to meet the quotations now obtaining, evidently feeling that pulp prices are on more reasonable levels, and while buying is still of a very cautious character and mostly involves limited tonnage, there is nevertheless a moderate movement of chemical pulp toward paper mills. Moreover, sellers are showing less inclination to cut prices to secure business, while the firm maintenance of quotations from primary sources in Scandinavia is a factor helping to steady the market here.

Kraft pulp is probably in the softest market position of any kind of pulp. There is some accumulation of foreign kraft on the spot in the States, and importers are desirous of disposing of such stocks. No. 1 Swedish kraft is available down to 3 cents a pound ex dock New York, and perhaps in exceptional instances at slightly under this figure, though for kraft pulp for shipment from the other side of the Atlantic 3.25 cents or more landed New York is asked. No. 1 foreign unbleached sulphite is quoted at around 3.25 cents on the dock, and No. 1 bleached sulphite of foreign origin at 4 to 4.50 cents, depending on quality and tonnage.

RAGS. — The high price level of raw cotton, a fairly good demand from paper mills, and comparatively small supplies coming in from collection sources are factors making for firmness in papermaking rags. Dealers say they are not receiving normal amounts of stock from country districts, and, as regards new cuttings, it is asserted clothing manufacturers demand higher prices for clippings owing to the advanced cost of cotton goods. Most grades of rags are meeting with a fairly ready sale to paper manufacturers and there is an upward tendency to prices. New No. 1 white shirt cuttings are quoted at 12.50 cents or higher f.o.b. New York, unbleached muslins at 11.25 cents, washables at 5 cents, light silesias at 8 cents, new blue overall cuttings at 8 cents and fancy shirt cuttings at 6 cents. Old whites are firm and freely wanted, with prices ranging between 7 and 8 cents for No. 1 repacked, and around 6.50 cents for No. 1 miscellaneous packing f.o.b. dealers' points. Thirds and blues are steady at 3 cents a pound New York for repacked and 2.50 cents for rough packing. No. 1 roofing rags are selling to felt paper mills at 1.50 to 1.60 cents a pound f.o.b. this city, and No. 2 stock at 1.35 to 1.40 cents.

PAPER STOCK. — The upward movement of prices of low grades of old paper appears to have been checked, temporarily at least, but no changes in a downward direction have been recorded, quotations being well maintained at the levels recently reached. High grades of old paper, on the other hand, are sagging, and sales have been noted at recessions. Dealers in New York quote old folded newspapers at 1.20 cents

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a pound f.o.b. this city. No. 1 repacked mixed paper at 85 to 90 cents a hundred pounds, common mixed paper at 50 cents. No. 1 hard white shavings at 4.15 to 4.30 cents a pound. No. 1 soft white shavings at around 3.25 cents, heavy No. 1 magazines at 1.85 to 2 cents, ledger stock at 2.10 cents, No. 1 manilas at 1.35 cents, and old No. 1 kraft paper at 2.25 cents. The shutdown of local newspapers owing to the pressmen's strike caused a temporary lapse in supplies of old newspapers and accounted for the sudden jump in prices of this grade, but with the strike over the probabilities are prices will react shortly.

OLD ROPE AND BAGGING. — There is a fair call for old rope from paper mills and steady prices prevail on this commodity, dealers reporting sales of No. 1 domestic manila rope at 5.25 cents a pound f.o.b. New York, with now and then a buyer getting a lot of rope down to 5 cents. It is declared by dealers that no such thing as sizeable accumulations of old rope exist in the trade, and the contention is that an increase in demand would quickly run prices up. Old bagging is quiet, papermakers buying merely in piecemeal fashion. No. 1 scrap burlap is quoted at 1.25 cents a pound and less f.o.b. New York, and roofing bagging at 90 cents a hundred pounds.

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Bibliography of Papermaking for 1922: C. J. West and A. Papineau-Couture.
Chemistry of the Alkaline Wood Pulp Processes: S. D. Wells and others.
Chemistry of the Sulphite Process: R. N. Miller and W. H Swanson.
Dicussion of Papers.
Drying and Conditioning of Coated Paper: J. O. Ross.
Effect of Atmospheric Humidity on Paper Tests: P. L. Houston and H. S. Kirkwood.
Efficiency of Paper Drying: S. B. Jones and W. F. Goldsmith.
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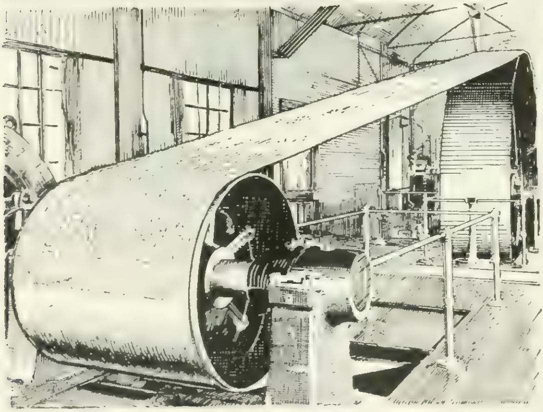

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:-: EDITORIAL :-:

THE SUPERINTENDENTS' ASSOCIATION

On Saturday last there was held a meeting of the northeastern division of the American Pulp and Paper Mill Superintendents' Association at Groveton, New Hampshire. The Association was entertained by the Groveton Pulp & Paper Company, and there were delegates from pretty much all over New England. There were thirty seven in attendance at the business meeting on Saturday morning, and a considerably larger number attended the afternoon session when papers were read and discussions held. In the evening a banquet was served to about one hundred.

A superintendents' luncheon followed the morning session, after which the delegates and friends visited the excellent plant of the Groveton Pulp and Paper Company, and some points noted during the tour of inspection served as a basis for comment and discussion at the afternoon session. The comment was largely of a complimentary nature, but there were enough frank suggestions for improvement here and there in the plant to fully justify the attitude of practically all pulp and paper mills on this continent today of freely admitting visitors and with them exchanging views. It may safely be asserted that when a papermaker sees an opportunity for improvement in the plant, he is not at all bashful about expressing himself when invited to do so, and his comment and suggestions are usually worthy of the careful consideration which is deserved by the helpful spirit in which they are given.

There are a good many lessons to be drawn from this superintendents' meeting, but only a few of them will be referred to at this time.

Mr. Ed. Lucas of the S. D. Warren Paper Company gave one of the most interesting and human papers that we have listened to in a long time, and delivered it in most delightful style. Mr. Lucas has spent a life time in the manufacture of one grade of paper, and he has made a success of it, although he would be the last to admit that he has yet mastered even this one branch of this great industry. It was easy to see that the speaker enjoys the satisfaction of accomplishment. He has not only succeeded in making a paper in every way satisfactory for printing of the enormous editions of the *Encyclopaedia Britannica* wihch must meet the most exacting specifications, but he has the inward joy of knowing that he has followed a father and grand-father in the art of paper making and in it found an absorbing life work. Mr. Lucas is a very quiet, unassuming gentleman, and would doubtless object strongly to being held up as an example of a successful papermaker, but we can honestly say that we feel a young man would be most fortunate to find himself working under the kindly direction and experienced eye of a man who began at 17 years, and has spent more than a score of years in the industry in the service of but two concerns. And this speaks well for the concerns as well as for the worker.

Another remark from Mr. Lucas is one which members of every organization should take well to heart. He expressed himself as being exceedingly diffident about speaking in public, and persuaded himself to accept the invitation to speak at the Superintendents' meeting simply because he felt it one of the duties of a member of any organization to be ready when called upon to take his part and share in his regular work. (Members of the Technical Section, please note.)

Another speaker was Mr. Berger of the G. D. Jenssen Company, who discussed the Decker system for cooking sulphite pulp. Mr. Berger was at Kenogami when the tests were being conducted which were fully described in a recent issue of the Pulp & Paper Magazine. Mr. Decker was justly complimented on the successful outcome of years of experiment with sulphite cooking, and Price Brothers & Company for their broadmindedness and generosity in permitting the publication of the results of Mr. Decker's work. It is gratifying to know that this important development of woodpulp manufacture has taken place in Canada. The warm discussion of the subject indicates a very keen interest on the part of superintendents, and others as well, in work of this kind.

As Mr. Nelson R. Davis, National President of the Superintendents' Association, stated in the evening. "The opportunity for superintendents to get together to discuss manufacturing problems is decidedly worth the support of every mill management." Mr. Davis' calm and deliberate presentation of the growth of this Association from a chance meeting of six friends to a National Association of six hundred members, together with its aims and possibilities for service to the Industry, should be brought to the attention of every manager who is not now an enthusiastic supporter of the Association. The superintendent not only makes paper, but also makes papermakers; he voices and puts into effect the decisions and policies of the management, he interprets and applies the work of the technical man, (which he often is, himself), and he directs the efforts of the workmen in producing the finished product from the raw material. At the same time, he is responsible for the organization of his working force, and the education and training in practical pulp and paper making of those who must carry out his orders.

Surely an association formed to assist the superintendent to perform these important functions is decidedly worth while.

There was nothing perfunctory about the vote of thanks which was extended to the Groveton Pulp & Paper Company for their courtesy and hospitality

THE MANUFACTURE OF ARTIFICIAL SILK IN CANADA?

The Natural Resources Intelligence Service of the Department of the Interior, Ottawa, recently issued a report with reference to the opportunity now offered for establishing an artificial silk plant in Canada. There is a growing demand for this material. Canada's imports of artificial silk yarns and thread in 1922 were valued at $2,013,429, while the present purchase of manufactured goods wholly or mainly of artificial silk from the United States and the United Kingdom alone have a value of nearly $1,000,000. In Mr. Fielding's Budget provision was made for rates of duty on artificial silk. The general tariff on artificial silk yarns produced from a form of cellulose is 15 per cent., while the British preferential tariff is 10 per cent.; while on fabrics made of artificial silk the duties vary respectively from 30 per cent. and 17 1-2 per cent. to 37 1-2 per cent. and 30 per cent. It is announced that Messrs. Courtaulds, Limited, the well-known manufacturers of artificial silk, intend to establish a plant near Quebec.

Canada has the great advantage of possessing large quantities of the raw material, namely, cellulose, in the form of pulp wood, which is the basis of the viscose method of treatment, the development of which in Europe has actually resulted in appreciable amounts of Canadian wood pulp being imported into France and Italy for use in their factories. The main essentials for this new industry are to be found in Canada—namely, a not insignificant market, the raw material in abundance, a protective tariff, and trade advantages that Canada enjoys with such countries as England, Australasia and South Africa through her preferential tariff.

The processes most commonly used for the manufacture of artificial silk are the nitro-cellulose, the cuprammonium and the viscose methods of treatment. The viscose process would appear to be the best for Canada on account of its comparative cheapness and the plentiful supply of cellulose material. A wood pulp freed from grease and bleached as for paper-making answers the purpose satisfactorily. The pulp is worked up with caustic soda, and the resulting alkali-cellulose is treated with carbon bisulphide in closed vessels. The viscose liquid is allowed to stand for some days, and is then filtered and forced through fine capillary tubes into a coagulating bath, and then spun. In England much progress has been made in the further development of artificial silk from cellulose acetate. Hereby hangs a story that may be called a romance of industry.

At the outbreak of war, it will be remembered, no English chemists had experience of the manufacture of cellulose acetate—a material required as "dope" for aeroplanes. The only available source of supply was Switzerland, and Dreyfus & Co., Basle, were the only firm. In 1916 the demand for dope was steadily growing, and Messrs. Dreyfus were induced to come to Great Britain and erect a plant. The result was the works at Spondon belonging to the British Empire Cellulose and Chemical Manufacturing Company. These works soon relieved the pressure and the War Office got all the cellulose acetate needed. At the end of the war, when at first it looked as if these works were going to be shut down, it was pointed out by Dr. Henry Dreyfus that this same material, cellulose acetate, which had been made for dope for areoplane wings, could be made into yarn resembling silk. Dr. Dreyfus's "silk," or "cellulose," as it is now called, differs very largely from other fibre or wood pulp artificial silk in that it is not soluble in water. Its basis is cotton treated in such a way as to make it indistinguishable from silk. It is said to be easier to handle in wearing, and is produced at about a quarter the cost of real silk. It sounds absurd to say so, but it is a fact that a "silk" stocking can be made of paper, coke and lime. Newspaper is pure cellulose, for woodpulp is cellulose. If coke and lime are fused together in intense heat they form lime carbide or calcium carbide from which acetylene gas is made, from which again benzol, acetic acid and alcohol are manufactured. At the Spondon works acetic acid is made and turned into acetic anhydride. Cotton is treated with this material and the result can be turned into "silk" stockings.

Though artificial silks are superior to the natural product in lustre, they are usually much inferior in strength and elasticity, especially when wet, and consequently manufacture has been largely restricted to the making of such fabrics as are not likely to be exposed to much moisture. It has therefore been only with the lower grades of natural silk that artificial silk has offered serious competition. This is seen in the extent to which it has been used in the manufacture of braids and trimmings. However, the works at Spondon have succeeded in turning out cellulose acetate silk yarns which are not spoilt by moisture, and are, moreover, much lighter in weight than the ordinary artificial silk. Moreover, as these yarns are non-conducting, the garments made of them are warmer though lighter than those made of the ordinary artificial silk. Thus for the first time synthetic silk is really competing with real silk.—Canadian Textile Journal.

ESCAPED

It is with great relief and thankfulness that we learn of the good fortune of the Oji Paper Mills in escaping serious damage during the recent earthquake. In their employ are two students in the Pulp and Paper Department of the Institute of Industrial and Domestic Arts.

Canada's Tariff Problem

Declaring that Canada can pay her debts and make satisfactory progress, if she adopts a sound and sane policy of national development, based on adequate protection for native industry, C. Howard Smith, President of the Canadian Manufacturers' Association, delivered a notable address on the tariff question at a largely attended meeting of manufacturers assembled in Montreal from all parts of Canada and particularly the Province of Quebec on Thursday, September 27th.

"The present tariff is not sufficient" declared Mr. Smith. "It must be raised. If this policy is adopted, there will be no trouble about getting capital for productive enterprises. It will flow naturally towards the country where it can make a profit. There will be little trouble about immigration. Immigrants follow opportunities for employment. I believe that the tide is turning. There are many evidences that people of all occupations realize that a higher tariff is necessary to develop the country, to free us from debt and to bring prosperity to all citizens.

Following the war, said Mr. Smith, it had been represented by agitators that the Customs tariff was responsible for most of the country's troubles and that manufacturers were taking advantage of the tariff to raise prices. Under pressure of public opinion created by these statements, four serious reductions had been made in the tariff, two in 1919 and 1920 by the previous Government and two in 1922 and 1923 by the Liberal Government.

"But where is the prosperity that was promised?" asked the speaker. "Have the years coincident with the four tariff reductions been good years for the farmer? Have they been good years for the consumers? Is the population growing? Are the railways profitable? Are the Banks improving their standing and adding to their reserves? Has the country developed?"

With such a policy, declared the President, it was impossible for Canada to prosper and, while the United States, which had strengthened its tariff walls, had been forging ahead, Canada had been experiencing the severest depression in agriculture and industry known for many years and had lost large numbers of its population to the neighboring republic.

Increases in the British preference had aggravated the situation, the changes being particularly harmful to the Canadian Woollen and Knitted industry. Designed to increase the percentage of Canada's purchases from the United Kingdom, the preferential tariff had failed of its purpose since Canadians were today buying considerably more proportionately from the United States than from the United Kingdom. To increase the preference still further would not effect the desired end, he was convinced, but would react more harmfully still on Canadian industries which could not successfully compete with the more cheaply operated British industries.

"Are we asking then that preferential tariffs be cancelled," queried Mr. Smith. "Not at all. The Canadian Manufacturers' Association, on various occasions, has recorded its adherence to the principle of preferential trade, especially among countries of the British Empire. But the time has come when, in justice to this country, trade preferences should be arranged on the basis of bargaining. That is, we should only give trade favors when we get equivalent trade favors in return. Canada has already arranged preferences with the British West Indies, New Zealand and South Africa and is trying to arrange a preference with Australia. Unfortunately however, the present tariff of Canada, owing to frequent reductions, is now so low that opportunities for further concessions are scarce. The first step, therefore, should be substantial increase in the general tariff. This would automatically increase all existing preferences given by Canada and would enable us to offer valuable new preferences in exchange for trade privileges."

The importance of the tariff to the farmers of Canada was specially stressed by Mr. Smith, who pointed out that approximately 2,500,000 people in Canada are directly dependent for their livelihood on Canadian factories. He estimated, from calculations based on Department of Labor figures, that these people consume annually 260,000,000 lb. of meat, 52,000,000 dozen of eggs, 39,000,000 gallons of milk, 390,000,000 lbs. of bread, 78,000,000 lbs. of butter and 13,000,000 bushels of potatoes.

Mr. C. Howard SSmith, President Canadian Manufacturers' Association

"When factory workers are out of employment or on part time or on reduced wages, they are forced to reduce their purchases, even of foods, and the farmers' sales are proportionately reduced. If they leave the country, they are permanently lost as purchasers of farm products. Further, when factories close down, railways lose freight, retailers lose trade and nearly every form of business is affected. All the people engaged in these forms of business are, of course, consumers of farm products, and when their incomes shrink, they must reduce their purchases from the farmers."

Mr. Smith estimated that on the average about 80 per cent of the farm products of Canada were consumed in Canada, consequently the home market was of vital importance to, and the chief support of, the Canadian farmer. It was also vital to the manufacturer. Repeated reductions in the tariff, striking manufacturers first, then their workmen, then the farmers and in turn all others, were increasing the national burden and preventing the development of the country.

Comparing Canada and the United States, Mr. Smith showed that the customs regulations of the latter were designed to discourage, and as far as possible, to prohibit importation of finished goods. Canada's were designed to encourage them. The United States had 314 ports of entry for 110,000,000 people; Canada had 502 ports for only 9,000,000 people. The U. S. ports of entry were either on the boundaries or on navigable waters. Canada's were for the most part inland, facilitating the sale of foreign goods all through the country. The U. S. tariff was so high that it practically shut out Canadian farm products, fish and manufactures; the Canadian tariff was so low that it gave the Americans every encouragement to sell the Dominion, manufactures, farm products and other goods that Canadians produced themselves. This one-sided arrangement should not be allowed to continue. There should be a fairer basis of exchange.

The Tariff Department of the Association, said Mr. Smith, had recently compiled a statement showing that 63 countries, including Great Britain, had increased their tariff since the war. Canada had taken the opposite course and had made four reductions, opening her markets to nations which had closed theirs to her. Why, he asked, should a change be made in a fiscal policy under which the country had made such progress? Trade had increased from $149,000,000 in 1879 to $1,747,000,000 in 1922. Capital invested in manufacturing had grown from $165,000,000, to $3,500,000,000 between 1881 and 1921. In the same period the value of manufactured products had increased from $309,000,000 to $4,000,000,000. In 1890 exports had amounted to $85,000,000 of which only 6 per cent were manufactured products; last year exports were $945,000,000 of which 51 per cent were manufactured and partly manufactured goods.

Finally, declared, Mr. Smith, the tariff is inseparably linked with the problem of the National Railways. In addition to reducing cost of operation, the Railways must increase their traffic and in this connection it was pointed out that the most profitable traffic was the freight obtained in the carriage of raw material to, and finished goods from, factories. If frequent tariff reductions curtailed manufacturing, it followed that the best customers of the railways would be hurt and the amount of freight reduced. Between 1913 and 1922, mileage had increased from 29,304 to 39,771 miles or 35 per cent but freight had only increased from 56,829,000 to 62,273,169 tons, or 10 per cent. These figures were startlingly significant.

Paul E. Joubert, Montreal, Chairman of the Quebec Division of the C. M. A., in introducing Mr. Smith, emphasized the fact that Quebec Province had experienced rapid growth as an industrial centre, owing to the enterprise of its people, its natural resources and its abundant supply of water power. This had all helped to make a good home market, adding to the prosperity of the agricultural industry. But manufacturing had suffered through lack of protection and many people had been forced to go to the United States, both artisans and farmers. This showed that unless manufacturing prospered, the farmer could not prosper, because the two were interdependent. Without a proper tariff neither could prosper.

Speaking at the same meeting, George A. Dobbie, Galt, Ontario, President of the Canadian Woollen Manufacturers' Association, dealt with the damage done by the increased British preference to the Woollen industry; J. E. McLurg, Halifax, N. S., made a plea for the shipbuilding industry, which was being strangled for lack of protection, and G. Deslongchamps, Montreal, Vice-President of the Shoe Manufacturers' Association, told a story of unemployment and closed factories caused by the low tariff policy of the country.

RECEIVERSHIP FOR DRYDEN PAPER CO.

It was learned Thursday that receivers have been appointed by the Ontario courts for the Dryden Paper Company, Limited. The receivers are F. Perry of Montreal, representing the bondholders, and F. A. Sabbaton, of Grand'Mere, one of the directors and a large shareholder. It is understood that the application for the receivership was made with the co-operation of the directors and that it will be in the nature of a friendly receivership for the purpose of enabling the company to finance its woods operations this year, and to conserve the equities for the creditors and shareholders.

It is understood that no reorganization is in prospect at this time, as it is hoped that the company can be placed on a profitable basis and eventually be discharged from receivership.

This action comes as a result of the company having found itself unable to pay the sinking fund and interest on its bonds, due October 1st, and at the same time finance the year's woods operations.

The story of the difficulties of Dryden is the same story that has applied to Riordon, Mattigami, Western Canada Pulp, and Whalen. The chemical pulp market has been depressed for three years and has not lived up to the promise held out last spring that it would share in the general betterment of the Canadian pulp and paper industry. For a time early in the summer, it looked as though the company might pull out. In June, with chemical pulp at the low level of about $60 per ton, it met all charges with a little to spare. In July, however, it suffered accidents to its digester, its markets started to become the dumping ground for Scandinavian products, and in July and August it ran into heavy losses. Then trouble developed with its new paper machine, arising from injury to the glazing cylinder, notwithstanding all which its showing was a little better in September.

It had been hoped that the installation of the new wrapping paper machine with a capacity of 10 to 15 tons daily, thus bringing the capacity of the plant to about 50 tons of heavy and light weight kraft and wrapping papers would prove the salvation of the company, as the wrapping paper end of the business has been the most profitable one, sulphate pulp having been subject to depression for some time.

Just how much the financial requirements for the season's woods operations will be and in what manner they will be provided for is not intimated.

The balance sheet of the company, as presented to shareholders last December, in comparison with the previous year, is as follows:

C. M. Sisson, has resigned from the Eddy Paper Company to take place in the sales department of the MacSimBar Paper Company, Otsego. Mr. Sisson was with the Eddy sales and production departments since 1915. He will assist President Charles Nelson of the MacSimBar Company with detail work.

HEAT

By A. B. OILER

In our last article we endeavored to show that office men who buy the fuel and mill men who use the steam are just as responsible for steam costs as the man charged with burning the coal, and therefore are obliged to know something about the generation and use of steam. This article is the second of the series on the subject, which will throughout be treated from the point of view of cost.

Our first suggestion is that all those interested, who have not already done so, should get the first three volumes of "The Manufacture of Pulp and Paper." The fundamental principles of every branch of paper making are well set out in these books and by using them for reference we can cover the ground without lengthy explanations. For the start one could not do better than to study everything on Heat, Water and Steam that can be discovered by searching through the index of each volume.

Suppose it were put up to you personally to reduce the cost of the steam used in your mill, probably the first thing you would do would be to go into that mill and study the general distribution of the steam throughout the whole plant with the idea of finding out where the money was spent, and particularly where a saving could be made. The first thing you would have to learn would be what to look for as you would not see much steam actually going to waste, though probably you would find some leaky valves, steam traps and steam pipes. We will make just such a study in this article. We will start in the boiler house and follow each steam line into the mill, and see what work the steam does.

If it is a "news" mill, one of the largest of the pipe lines runs to the engines or turbines. Both of these machines are constructed so the heat of the steam may be utilized for the production of work, in the engine, by pushing the piston back and forth, in the turbine by causing the rotor to turn. (In this paper, for simplicity, we will consider only the engine.)

What happens is this. We apply heat to the water confined in our boiler till it is turned into steam. The molecules are now moving very rapidly, colliding with one another hitting upon the plates of the boiler and in their effort to separate from one another, exerting pressure on the interior of the boiler, the steam piping and the cylinder of the engine. The piston has more pressure against it on the steam side than the weight of the combined load and back pressure on the other side, therefore it moves, the crank moves and the engine is in motion.

The same thing would happen if we could burn the coal directly in the cylinder in the same manner as we use gasoline or oil in an internal combustion engine. In the latter type of engine the heat expands the gases left after the mixture of gasoline and air has burned and developes the required pressure in the cylinder. The point is that heat does the work in both engines. It is heat we require not steam. Steam is only a convenient means for carrying heat, though of course wherever steam is wasted, heat is lost. We have to keep in mind that a great deal of heat can be lost without our seeing any steam going to waste.

How much heat does our engine require to develop one horse power? According to our text book one H. P. = 33,000 ft. lbs. per min 778 ft lbs. per min. = 1 B. t. u. 33,000 ÷ 778 = 42.42 B. t. u per minute or 2545 B. t. u. per hour. Some heat is lost by condensation of the steam and the radiation of heat from the cylinder to the surrounding air. If we estimate all losses at 25 per cent. of the heat turned into power, we have 2545 B. t. u. + 636 B. t. u. = 3181 B. t. u. necessary to develop one H. P. According to the table Properties of Steam — Vol. III, last page, there are 1186 B. t. u. in a lb. of dry and saturated steam at 100 lbs. per sq. in. absolute pressure. Which might be taken to mean that 3181 ÷ 1186 = 2¾ lbs. of steam at that pressure will supply the necessary heat to develop one horse power.

No engine is anything like so efficient as this and in practice it is usually necessary to supply from 20 to 45 lbs. of steam per H. P. per hour, depending on the design of the engine and the state of repair it is in. There is such a wide difference between the consumption of the best engine and the quantity of steam required in theory that it is plain we have found something worth investigating. Later on we will have an article on engines and turbines, and study the point more thoroughly. For the present a rough idea will serve.

A pound of average good coal contains about 13,500 B.t.u. and it will evaporate approximately 7.5 lbs. of water from and at 212 deg. F. We have to burn 20 ÷ 7.5 = 2.67 lbs. of coal to produce one H. P. from the first engine and 45 ÷ 7.5 = 6 lbs. of coal for the same power from the second engine. The engine requiring 20 lbs. of steam to develop one H. P. is taking 3181 ÷ 20 = 159 B.t.u. from each lb. so there are 1186 — 159 = 1027 B.t.u. still remaining in each lb. of steam leaving the exhaust. In the exhaust from the engine supplied with 45 lbs. per H. P. there are 1116 B.t.u. per lb. $(1186 - \frac{3181}{45})$. These figures give us a lively interest in the exhaust, and we next proceed to find out what becomes of it.

Our investigations will probably show that it is carried to a paper machine and helps in getting the moisture out of the sheet which is being made. It may be applied in a number of ways, because engineers have different ideas on drying paper, but in every system part of the water is removed by suction, part is squeezed out, and the balance is driven out by applying enough heat to it to change it to vapor which is carried away by the rising currents of warm air.

Here again it is heat and not steam that is required. But we find it has to be applied with judgment. The quantity of water removed mechanically is bound to vary, so that more steam must be used at one time than another. If the heat is not controlled properly, many a ton of saleable goods (permissable moisture goes out of the ventilator instead of by rail with an invoice attached.

It will be found probably, that the steam gauge on the pipe line leading to the dryers indicates from five to ten pounds pressure. We already know (from Volume I Section 4, pages 81 to 85 inclusive) that a good deal of heat is tied up in "latent heat" and it can only be released by condensing the steam. We find out, by looking up our "Properties of Saturated Steam" table that at 5 lbs. gauge each lb. of steam holds 960.6 B.t.u. and at 10 lbs. gauge 952.5 B.t.u. as latent heat of condensation. There are 1027 B. t.u. in each lb. of exhaust steam from the first engine we considered and 1116 B.t.u. per lb. in that from the engine using 45 lbs. of steam per H. P. developed. Neither one leaves a great deal of "pressure" heat available for drying so the steam is condensed and the latent heat used.

This partly explains something that must have struck you when you were reading about the two engines. That is, that it was strange for any concern to use an engine which had to be supplied with 45 lbs. of steam to develop one H.P., when they could buy one which would use less than half the amount. The quantity of steam used in drying the paper is the governing factor and if a certain number of pounds are required it is often considered better to use an engine which is extravagant with steam but which takes less heat out of each pound of it, and leaves the exhaust hotter and better for drying.

The water is removed from the dryers and returned to the boiler house to be used again for feed water. The B.t.u. still in it depend on the method of handling it back to the boilers, but in any case it is a great saving to use it over, as it is at least a 125 deg. F., higher in temperature than raw water from lake or river.

If, as suggested, you undertake to follow all the steam lines going into the mill, you will trace another large line to the digesters. A great deal of heat is required to raise the temperature of the charge to the point where chemical action will take place properly and quickly. Several references are made in Volume III to the steam used, so it is not necessary here to enlarge on the saving which may be made by exercising proper care.

Steam is used to carry the heat necessary to speed up the bleaching process, also for making size, and in the beater room. Every pound used in any process where it is turned directly into the liquid to be heated and there is no possibility for returning any part of its heat to the boilers, will show as a dead loss on the boiler house records, unless it is measured out and charged to those departments. On the other hand, as such lines are of comparatively small diameter, they are usually tapped off of the nearest steam main and the steam may be charged to another department entirely.

Our Canadian winters necessitate that the provisions for heating shall be extensive. To give any idea of the cost of keeping a plant comfortable is difficult because conditions vary in every mill. One mill we know of uses 50 tons more coal per day when the weather is severe than they use when the heaters are off. If the heat is left off every day it can comfortably be done without, quite a large saving is effected. The opportunity for such a saving is usually given in the Spring season when it is advisable to make it one person's particular business to look after turning the heat on and off.

There are heat losses in the boiler room due to radiation from the boiler walls, and the steam and water piping. A great deal of it goes up the stack with the hot gases. We will discuss these losses in another article.

TO TRAIN CANADIANS FOR RESEARCH WORK

Ottawa. — Forty-five persons have begun work yesterday in the graduate schools of the various Canadian Universities under Fellowship, studentships and bursaries awarded by the Research Council of Canada. Twelve Fellowships, having a value of $1,200 each, eight studentships, with a value of $1,000 each and 25 bursaries, having a value of $700 each have been granted by the Research Council for the present year, and these awards are being held in nine departments of science at nine universities.

During the six years ended March 31, 1923, the Research Council awarded 27 Fellowships, 65 studentships and 54 bursaries. These 146 awards were held by 96 persons and 15 universities in 12 departments of science.

Of the 96 grantees, 21 have had their awards renewed for the year 1923-24. The Research Council has, therefore, during the past six years contributed to the stream of Canadian investigators 75 persons who have received post-graduate training in some branch of science and in research.

WATERMARKED WILL

Mr. Robert Isgar, of Paisley road, West Southbourne, Bournemouth, who died on June 7, left estate of the gross value of £5,254, with net personalty £5,054. The will is made on a larges sheet of parchment paper, the whole of which is covered by a watermark, which is a complete calendar for the year 1889, surmounted by portrait medallions of four Messrs. Marshall, and headed "Three generations of Dandy Roll and Bank Note Mould Makers, Wire Weavers, etc.," and bearing at the foot of the watermark the name T. J. Marshall and Co.

RECEIVER FOR PAPER CONCERN

New York, Oct. 5. — Presenting a claim for $200,000, Michael P. Murphy, today filed in Federal court a petition for equity receivership for the American Writing Paper Company of New Jersey. The petitioner asserted that corporation was solvent but a shortage of cash and threats of suits by creditors made the conservation of assets advisable. The court appointed Sidney L. Wilson, president of the corporation, receiver under $50,000 bond.

Another cargo of baled pulp is on the way from Norway, the Norwegian steamer Mexicano having sailed from Gothenburg on September 26 for Portland. She is due here some time next week, and probably will discharge at the State Pier. She has about 850 tons to unload here. From Portland she will go to Boston, where she will unload 2,000 tons and will finish discharging at Philadelphia.

Recent Improvements in Beaters

By LEO SHLICK, Papermaker, Engineer & Mill
Architect

The high cost of raw material makes it imperative to eliminate the over-beating of part of the beater furnish, the under beating of such stock as is circulating sluggishly within the tub, as well as to eliminate the formation of "lodgers" viz. stock deposits in the dead corners of the tub.

Modern, speedy paper machines require a uniform stock, uniformly mixed during the entire beating process and hence to be carefully beaten throughout. It should be realized that quite a considerable percentage of the "over-beaten" stock becomes useless for papermaking purposes, forming slime, clogging up the wires, felts and screens and finally slipping away with the whitewater. Here is where from 3 to 5 per cent. of the furnish is entirely wasted and no reclaiming of this sort of overbeaten stock will pay for itself.

The Value of Fast Circulation

Every papermaker knows that notwithstanding Jordan work, free stock, dumped from the beater, has the tendency to remain free and that slow stock dumped from the beater will remain slow and even become slower.

Hence, if part of the beater furnish is over-beaten, while part of the furnish is properly beaten and the remainder is under-beaten it is obvious that this makes it impossible to obtain as good a sheet as a modern fairly fast machine requires. Stock, which has succeeded in creeping along the bottom of the beater tub will also succeed in causing trouble in the head-box and when floating past the slices. It should be understood that fibres are not of uniform specific gravity, which means, that just as logs become water-logged in the river, so fibres, becoming water-logged in the beater, will sink to the bottom, providing mechanical means have not been employed to stir them forcibly into a uniform mechanical mixture with the rest of the stock.

All paddling and stirring by hand will not eliminate this tendency of the fibres, as long as nature continues and persists in growing trees, made up from long and short, light and heavy fibres. Nature provides for strong and resistent fibres where the tree required them most, to withstand the abuse of the elements.

Poor formation, unnecessary broke, slower machine speed owing to poor stock and poor machine finish do not make the management any happier. The very best machine tenders and the best of beatermen are unable to alter these conditions, even if threatened with dismissal, if the old-fashioned, hard driven flat bottom beaters have not been brought to a higher level of efficiency. This means that the beaters must be improved in the same proportion as the increasing rate of speed and output of modern paper machines demands. More speed on the paper machine calls for more speed in the beaters.

What holds good for the stock that floats on the top of the beater tub and which can thus be examined by feel or eye, also, to say the least, holds good for the stock moving along the bottom of the tub. This means that the stock on the bottom should move just as fast as the stock on the surface.

Is this not the case? A uniformly blended and thoroughly stirred mixture is not passing over the bed-plate. It is of greatest importance that the speed of the stock within a tub is of such magnitude that the furnish is automatically stirred and continually mixed. This means that the stock must be kept in perfect mechanical suspension. If a certain circulation is not maintained part of the stock will remain or sluggishly circulate near the backfall end, along and within the sweeps of the tub and along the fillets and the bottom, hence remaining "under-beaten."

A fast circulation also permits heavier consistencies, hence saving power inasmuch as less water is carried in the tub. Last, but not least, a fast circulation causes the stock to pass over the bed-plate much more rapidly, hence reducing the beating time very considerably. Average beaters operate at from 6 to 15 feet per min., while a good beater ought to circulate from 2 to 20 times this figure, depending upon the design of the new beater or the extent of the improvement.

Method of Checking up Existing Beaters

But very experienced men can judge by eye just what the circulation amounts to. However, one should never rely upon guess-work and the following test should be made to obtain the circulation in feet per minute. Mark off say 5 feet along the wall of the tub using chalk to make the marks visible. Float a piece of paper along this marked off distance and time the floating paper by means of your watch or with a stop watch. Divide 300 by the number of seconds obtained which gives the feet per min. The following table will simplify matters for the mill man.

Time 5 feet is traversed; seconds	Speed in ft. per min.	Time 5 feet is traversed; seconds	Speed in ft. per min.
2	150	21	14¼
3	100	22	13-2/3
4	75	23	13
5	60	24	12½
6	50	25	12
7	43	26	11½
8	37½	30	10
9	33-1/3	34	8.8
10	30	40	7½
11	27	45	6-2/3
12	23	50	6
13	25	60	5
14	21	70	4½
15	20		
16	18¾		
17	17-2/3		
18	16-2/3		
19	15.8		
20	15		

The result obtained pertains to the surface speed only, and does not allow conclusions to be drawn as to the bottom speed.

Measure the depth of the beater furnish by immersing a stick into the tub. Now make a stick (or better, use an adjustable stick) of twice the length of the depth of the furnish. Attach a string to the top of the stick, slotting the stick so you may shorten or lengthen the string. Attach a light plumb or a small nut or a piece of iron to the end of the string and after having chalked off half and full feet on the wall of the tub, immerse the stick into the stock and make certain that the stick stands straight when you start this test. Supposing the stick travels at a certain speed where it emerges from the stock, the lower end of the stick will lag behind, hence tilting the top of the stick forward. As the "plumb", which is attached to the top of the stick, will be perpendicular, the distance between the end of the plumb and the mark on the stick, indicating the depth of the furnish will show the proportion at which the bottom stock lags behind. (Ed. note: The distance between the "plumb" and the stick at its middle point, measured with a rule, is the distance the bottom lags behind the surface while the stock travels 5 feet.)

Repeat this test several times until an average is obtained. The "plumb" should clear the stock even when tilted. Hence the string should not be too long.

Principles embodied in Shlick Patent Beaters and Patent Attachments

Owing to the fact that the stock in an ordinary beating engine creeps towards the roll at an average speed of about 10 feet per minute, and considering that the average surface speed of the beater roll is 1,600 ft. per min. and upward, it is easily understood without going into mathematics, that a considerable impulse must be given to the stock when entering the fly-bar "buckets" so as to speed up the stock from its velocity of 10 feet to the velocity of the roll. This means that the stock must be whipped into the roll whereby said stock is accelerated 1,590 ft. per min.

However, the present beaters do not provide for keeping the stock between the flybars within the buckets, to such an extent that a fair circulation may be obtained. A very large portion of the stock thus scooped up, is thrown out again before the bed-plate is able to seal the "bucket". This is a very considerable waste of power. The actual power required to circulate a 1,500 lbs. beater, with the roll off the plate, is, as an average, 35 H. P. But a relatively small portion of this power is really used to circulate the stock, inasmuch as a great deal of stock is thrown out of the roll before the bed-plate can seal the "bucket." The elimination of this waste is one of the objects of the Shlick Patented Beaters and Attachments.

Returning to the power which is absorbed by the actually propelled stock, such as is contained between the fly-bars when the particular bucket has been sealed by the bed-plate, it must be understood that all the power required to whip this stock into the roll is and remains dormant as long as the stock travels at the same rate of speed as the roll. This means that the entrained stock has the speed of the roll and when given the means to fly off over the back-fall it will do so at the initial velocity of the roll, gradually fanning out.

To make use of this power is the second feature of the Shlick Patent Beater. When making full use of the dormant power contained within the entrained stock, a continuous stream of moving stock is produced which is utilized to circulate the stock in the tub.

Another waste of power occurs within the tub, viz, the frictional resistance offered by the walls and the bottom of the tub. This is overcome by tilting the bottom of the tub, sloping the same gradually. In Shlick Patent Holland Beaters, the slope is such that the stock at the bottom of the tub circulates just as fast as the surface of the stock.

In beaters equipped with the Shlick Patent Attachments, the bottom stock lags but very little behind inasmuch as the shape of the old beater cannot be changed in its entirety to something which it is not. However, a great deal can be accomplished towards this end.

This equipment has been invented and developed as to manufacture, and attention has been paid to the various disadvantageously existing conditions that are inherent in and form part of the old beater to be improved upon.

While the "Shlick Patent Beater" attains a travel of 85 to 100 feet per minute (6 to 20 times faster than the flat bottom type) all items entering its construction being carefully gauged so as to eliminate friction and power losses of the more or less unproductive sort, it is quite another story to convert a poor beater into an efficient piece of equipment by means of an attachment. There are beaters with the roll way up on a hump, others with fly-bars crowded together, some of them wrongly filled when being rebladed and some of them are operating at a wrong speed. Although of little use anyhow, speaking from a modern papermaking stand-point, nevertheless even these worst cases can be improved by following the analysis which is made for every cases where an attachment is installed.

A circulation of 40 and more feet per minute is not uncommon in Shlick Equipped Beaters, which favorably compares with some 5 to 8 feet prior to the change. This is effected without speeding up the roll and without any additional power consumption.

Needless to say the speed of a beater is interlocked with the consistency carried within the tub. Also here exists a surface and a bottom consistency, the heavier stock being below the surface, and the slower the speed of the beater, the higher the consistency difference.

Results Obtainable

Without speeding the beater roll above the normal roll speed of 1,600 to 1,800 feet per min. which is the average speed of today, the following results are claimed:

1.—Double the circulation without additional power, which is often surpassed by attaining as much as 400 per cent. increase.

2.—The consistency can be increased.

3.—The carrying capacity of the tub has been increased up to 73 per cent.

4.—The output is increased 25 per cent. and as much as 73 per cent. has been reached.

5.—The stock is of better quality, eliminates slime formation, etc., to a considerable degree and forms a better sheet on the machine.

6. Beating time is shortened per ton of paper made, ranging from 25 to 70 per cent.

7.—With power at 35 per H.P., the average attachment pays for itself within 143 working days. When figuring power, do not omit the overhead, incidental thereto, also the depreciation and the interest due on the investment, also not omitting the fair profit one one would expect from a business venture, involving the amount of the cost of the installation per H.P. and annum.

New Shlick Tubs

In case the old flat bottom tub is so far gone that a new one would be advisable, or in case a more efficient result is wanted a new Shlick tub will increase the output from 50 to 100 per cent. viz. as conditions may dictate. The bottom of this tub is a sloping one and the shape of the tub eliminates dead corners, giving the bottom stock just as fast a circulation as the stock at the surface. The old roll and lighters can usually be used in the new tub.

A saving of power of 30 to 40 per cent. is obtainable, hence paying for the cost of the tub within a short time.

The work of the beatermen always has been very hard, especially when the stock has to be handled entirely by hand. Shlick tubs eliminate the paddling by hand and the paddling when dumping the beater. Furthermore, the hood design and the shape of the beater converts the beater into a first class feeder. Hence, with a large portion of the heavy work eliminated a great step towards relieving the beatermen from unnecessary drudgery has been made.

The New Shlick Holland beaters do the work of several flat-bottom beaters, and at a great saving of power.

A new beater design can only be considered an improvement over other equipments.

1.—If the beating effect is improved to the extent that a lower priced furnish is used for the manufacture of a given product.

2.—If the formation on the papermachine has been improved through the use of a better milled and more uniform stock.

3.—If, through the use of a more uniform stock the papermachine can be pushed to a maximum speed consistent with quality wanted.

4.—If the stock in the beater travels just as fast on the surface of the tub as on the bottom.

5.—If the beating action is under perfect control.

6.—If the cost of labor plus power plus depreciation plus interest is less than before.

7.—If all paddle work is eliminated.

8.—If the first cost of the equipment is automatically written off through the papermaking advantages gained through its use.

The Shlick Patent Holland Beater is not a rough foundry product and is being designed up to a standard and not down to a price. By process of elimination all possible power and friction losses have been reduced to such an extent that this style of beater in American practice is operating at the rate of 85 to 100 feet per minute, using just the ordinary size of driving pulley as is generally used on beaters of similar capacities.

The power consumption of the roll has been reduced to a minimum. Special fly-bars have been developed and are being rolled to more economically handle the stock. The plate is of the Shlick "multiple type," insuring a perfect beating action throughout. The beating pressure is adjustable and can be changed within a few minutes. Hence any kind of paper from blotting to onion skin may be beaten with the same beater.

This type is a very fast feeder and the dumping takes but a few minutes without the use of a paddle. This beater has the special advantage in circulating just as fast with $1/4$ the furnish in the tub as with the tub brimful.

Recommendations as to Shlick Patent Beaters and Attachments are supplied and analysis of beating problems are furnished by Leo Shlick, 314 Beacon Street, Boston, Mass., U.S.A. or his sole Canadian Manufacturing Licensees, the Sherbrooke Machinery Company, Ltd., Sherbrooke, Que., Canada.

NO MORE PAPER CLOTHING

Washington, D. C.—The manufacture of paper textiles in Austria has declined to a very great extent since the war, according to a report received from William Ford Upson, American Trade Commissioner at Vienna, by the Bureau of Foreign and Domestic Commerce.

One of the largest manufacturers stated that it stopped when the first bale of cotton reached Austria after the war. His company still has the machines, and would produce more paper textiles if there were any demand. It has a few thousand meters of the Product left, but it is gradually being used up as a substitute for burlap in wrapping bales and packages. He declines to fix a price at which he would sell, but is open to offers, and says that there are undoubtedly other small scattered lots that could be rounded up and obtained if anyone is interested in securing them.

Further inquiry shows that one firm is still manufacturing paper textiles at a reduced scale. They have one factory in Austria and one in Czechoslovakia, with a total capacity of about 50,000 meters per month. The products are sold by the meter for wainscoting and various technical purposes, such as insulating, lining of fancy leather goods, and lining of boots and shoes of inferior quality. In some instances the product is sold to factories, where it is made into working clothes for their own employees.

Ready-made clothing made of either pure paper or paper mixed with other materials, however, is no longer procurable in Vienna.—Press Item.

MARKS AS WASTE-PAPER OF BETTER VALUE THAN MARKS AS CURRENCY

The National Bank of Belgium has just sold 362 tons of German marks as waste paper, according to a Brussels despatch to the Daily Express.

Acquiring the money in business transactions with Germany, the Bank found that the stacks of marks had outgrown all safes, and would need a new building to house them.

The offer of a junk dealer who accepted the marks at usual waste paper rates was 100 per cent more than their cash value at present exchange.

A MODERN BRITISH PAPER MILL

(From Our London Correspondent.)

London, Sept. 25, 1923

Some time ago I mentioned that the well-known and highly respected firm of Edward Lloyd, Ltd., were constructing a new paper mill and that the famous Walmsley papermaking machines were to be installed in order to bring the mill and its output on a level with the most up-to-date concerns in the paper world. The name of Lloyd is a household one in England and many years ago I heard Sir Frederick Becker state at a large public dinner in London that when he fixed up a pulp contract with Lloyd's "their word was as good as their bond." That is the reputation of Lloyd's, as they are known here, in a nutshell and it requires no elaboration from the pen of a scribe; indeed, it would be a fine characteristic of England if there were a few more firms like Lloyd's in existence.

The other day I visited Sittingbourne, Kent,—not far from the city of London—to have a look at the progress of the mill on the Kemsley Down, in the parish of Milton Regis. Kent is the garden of England, so we may assume that the new mill is going to be the acme of efficiency and a criterion of what a mill should be. It is being built at a spot near Castle Rough, which is said to have been the site of Kemsley Castle—a castle that was built to protect the hinterland from the piratical forays of the Danes. The inception of the mill is, therefore, heralded with historical events, which, in their train, brought success. Some of the Kentish papermakers look upon them as a good omen for the new mill.

The Foundation Stone

Work on the mill was commenced a few months ago, as already recorded in the "Pulp and Paper Magazine," and today hundreds of men are as busy as ants on the construction work, excavating, etc. The plans show that the mill faces south and the buildings will have a width of 330 ft. running back to a depth of 800 ft. In the front of the mill lies the foundation stone, which will stand for times undreamt of, bearing the simple inscription:

"This Foundation Stone was laid by Frank Lloyd, Esq., in commemoration of his 50 years with Edward Lloyd, (Ltd). 17th August 1923."

It is a notable tribute by a worthy son to a notable father, who was a genius as well as a papermaker of the true British type.

Upon entering the space in front of the building enclosed by lofty and solid walls of brickwork, one comes to the shredder house, which is a spacious place for the storage of raw materials. From the shredder house the pulp will be pneumatically conveyed through tubes to the potcher house. This step indicates labor saving devices and it is one of the principles in the construction of the mill that hand labor will be completely eliminated where it is possible to introduce the latest mechanical equipment that science has yet produced. On the left front to the west door of the building, the potcher house for Nos. 3 and 4 machines is to be built. It will be a spacious building and modern machinery will be used for dealing with raw material.

Engine and Machines

The engine house and the potcher house extend from Nos. 3 and 4 potchers to the east of the outer wall and at the rear of the engine house is the boiler house, where the shaft is now being constructed. The shaft will be 150 feet in height and it has an interior diameter of 9 feet. In the engine house, the main engine will be a Sulzer (Swiss) horizontal reciprocating one of 2,200 h. p. This will generate electric current at 2,200 volts that will supply the electrical energy for the whole of the mill at first, electricity being the principal power to be used.

Beyond the potcher house, and extending for 350 ft. with a width of 112 ft. is the machine house . At present it is intended to put down two machines, 275 inches wide and running at 800 feet a minute, which means that the output of newsprint will equal 75 tons per day. These will be the largest newsprint and papermaking machines in England and they will be similar to the machines of the Abitibi company in Canada. Beyond the machine house will be the paper store from which the reels will be conveyed to Kemsley wharf to the boats, a little distance beyond, for the waters of Milton Creek are at the back door of Kemsley Mill. It is the existence of the Creek and the river Swale that has, like a magnet drawn the paper making industry to their banks. Further, Ridham Dock is only a mile away, so that Messrs. Lloyd's new mill is in a happy situation, being close to water and docks and a short run from the city of London by road and rail. The close proximity to London is a valuable asset. Railroad charges will be saved, if necessary, and prompt orders will be handled in a way that few other mills can deal with them.

An All Steel Mill

The general stores and the engineers' shop are close to the boiler house and to the west of the machine house. The engineers shop, I am told, will be fitted with some of the finest tools and equipment obtainable, and there will be facilities for dealing with all classes of work on the spot in connection with papermaking machines 275 inches in width.

The mill will be a huge framework of steel, with brick panels. No timber at all will be used in its construction and when bricks are not used in the fabric cement will be employed, so that it is the intention of Messrs. Lloyd to make every room and building throughout fireproof from top to bottom. All the roofs will be covered with concrete, with lantern lights in every roof, so that the mill will be a well lighted concern. The electric current at present supplied to Kemsley is taken from Lloyd's mill at Sittingbourne. An old engine house has been converted into a transformer house and the current from Sittingbourne is transformed from 6,600 volts down to 430 volts and distributed to those parts of the new Kemsley mill works where it is required. This work, it should be stated, was carried out by Lloyd's electrical engineering staff.

Dock Work

To meet the requirements of the new mill, Kemsley Dock has been re-constructed and dredged so as to provide berths for river barges and other craft for loading paper or unloading raw materials. These barges will enable overside loading possible in the Thames for Lloyd's export trade. They can also be used in connection with the London business. At present all the steel work used in the building of the mill and other material, are brought down from London direction by water, unloaded into cars and run on Lloyd's railway into the building works. It is possible that paper leaving the new mill will be handled in the same way.

This new mill of Lloyd's is being built from designs prepared by their own drawing office. Ideas have been culled from Canada, needless to say and America, as well as other countries, and the whole of the work is being supervised by a professional architect.

The mill is being built to meet the growing demand for newsprint at home and abroad. No expense is being saved—reasonable, of course,—in the constructional work and the introduction of the latest and fast running machinery.

A RARE BOOK

"OLD PAPERMAKING" by Dard Hunter

"In the entire history of printing these are the first books to have been made in their entirety by the labour of one man" is the statement by the Smithsonian Institution, Washington, D. C., in regard to the two books previously made by Dard Hunter which are monographs on the art of etching. This statement refers equally well to "Old Papermaking and the Watermarks of the Old Paper makers" which was completed early in the present year.

Papermaking, which in times past was an art, is today largely a process of manufacture where tons are made by machinery while formerly pounds or ounces were made by hand.

While Hunter's previous books would doubtless be of equal interest to present day typographers and paper makers, this one has the added attraction to papermakers particularly in its subject, dealing as it does with the history of the art of papermaking, while this art is exemplified in the book itself. Not the least interesting part of the work are the original specimens of paper which are included, dating from 1480., together with samples of Dard Hunter's paper and watermarks.

Dard Hunter has long been a member of the Technical Association and in 1916 compiled a bibliography of hand made paper and its watermarks which was published by the Association for the Committee on Bibliography.

In "The Mentor," March 1922, was published an article by Mr. Hunter which is worth reproducing in connection with the mention of his present work:

A Maker of One-Man Books

Typography has always been of vital interest to me. I was reared in the midst of paper, type, and ink. My earliest recollection is watching my father set type, and print on an old Washington hand-press. He had a great love for the printing of the early craftsmen, which he said had never been excelled; it was his contention that modern book printers should follow in their foot-steps.

For twenty years I laboured to get the quality of old typography into books that I was producing. I used the so-called hand-made paper from Italy, my type was of special design, and the printing was executed with care. But my books always lacked the charm of the old volumes. I have seen through the press upward of two hundred different books, but none of them ever pleased me. They were just so much paper with a type impression—that was all.

The Italian book printers of the fifteenth and sixteenth centuries have never been excelled. Their paper, even after four hundred years, shows a richness in tone and texture which the modern papermakers have never equalled. The type possesses a freedom of stroke unknown to-day. The margins and type arrangements are always satisfying, and the presswork displays a brilliance and firmness that suggests sculpture.

The old books from the presses of Aldus and Nicolas Jenson haunted me. Why could not I, in this age, produce as fine typography as these fifteenth-century artisans? Surely, with all the mechanical ingenuity of to-day in papermaking, type founding, and printing, one should be able to equal, if not excel, the old typographers.

I went to Italy, and studied papermaking by hand; then to Vienna, where I entered the Institute of Graphic Arts, the oldest of its kind in the world. I studied type design at the Academy of Industrial Arts in Vienna, and then went to London, where I entered the Royal Technical College, making a specialty of tool making.

After a number of years, I returned to America, to try my hand again at book printing. My efforts were still unsatisfactory.

The trouble was this: I had been buying paper that had been made in another part of the world, by men who knew or cared nothing about the books I was making. The type I had been using, although of my own design, had been made in a great commercial type foundry by men uninterested in my work. All that I had been doing (like the rest of the printers) was to set the mechanically made type and imprint it on the paper of which I had no part in making.—I had been simply printing books not *making them.*

I came to the conclusion that if I wished to arrive at the peculiar excellence of the old printers I must work with their methods. This involved many difficulties: I had to learn papermaking and typography as the ancients had practised these arts so it was essential that I have my own hand-made paper mill and type foundry. My working materials for book production had been paper and type, now they were to be linen and cotton rags, bar-steel, copper, lead, tin, and antimony.

I built a small mill myself, which I patterned after a Devonshire cottage. It was thatched with rye straw which I had grown on my small farm. I equipped this miniature mill with appliances such as had been used by the fifteenth-century papermakers. An old, creaky wooden water wheel reduced the linen and cotton rags to a fibrous pulp from which I made each sheet of paper separately in a hand mould.

Next I set up a small foundry, and, with no other tools or utensils than those that would have been used four hundred years ago, I cut the letter punches in steel, struck the matrices in copper, and cast the fount of type in a hand mould. When there was sufficient water to turn the water wheel, I worked in the mill, and was able to make about seventy-five sheets of paper a day. When there was no water, I made type, as upward of a hundred thousand pieces were needed for my project.

When the paper and type were ready I printed the first book, using a press of the hand-lever type. The first book, an edition of two hundred, was finished in 1915. The second book, of which there were two hundred and fifty copies printed, was completed in 1916. Both of these volumes were made for the Chicago Society of Etchers, and were monographs on the art of etching. The entire work of papermaking, type making, and printing occupied a period of seven years.

Even these books did not please me, but I more nearly approached the peculiar elusive art of the fifteenth-century typographers than I had ever done before.

What the whole undertaking revealed to me most was the interest there is in the history of papermaking and watermarking. I have been so engrossed with these subjects since my first experiments in paper that I now have in progress a book dealing with the art of the ancient master-papermakers.

The hand moulds on which the paper for my first two books was made, the letter punches, matrices, type, and tools that were used in their production are now in the Smithsonian Institution, Washington. Copies of the two books are there also and on the label of the case in which they are housed may be read: "In the entire history of printing these are the first books to have been made in their entirety by the labour of one man."

Note: The editor understands that there are yet available a very few copies of this remarkable book.

TECHNICAL SECTION

REVIEW OF RECENT LITERATURE

MECHANICAL PROCESS

D-4 Preparation of Wood for Mechanical Disintegration by Grinding or Rolling. BRUNO ZIMMERMAN. Ger. pat. 376,910. **Papierfabr.** 21, 297 (June 17, 1923). The wood is treated under pressure and at a temperature over 100° C. with calcium hydroxide solution under constant circulation.-J.L.P.

D-4 Regulation of the Grinder K. KLIMPKE. **Zell stoff U. Papier** 3, 139-145 (June 1923). An extensive article, with diagrams, on the regulation of grinders for groundwood, with especial reference to those of German origin.-J.L.P.

D-4 Innovations in Grinders. ERNST BLAU. **Wochlb. Papierfabr.** 54, 1639-1642 (June 9, 1923); 1712-1714 (June 16, 1923). A general article covering the recent improvements on German machinery.-J.L.P.

D-0 Use of White Water in the Manufacture of Groundwood and its Effect on Freeness. W. E. BRAWN. **Paper Trade J.** 76, No. 25, 50-52 (June 21, 1923). Use of white water reduces the freeness of groundwood owing to the "flour" present in the white water. If the pulp is used directly from the groundwood mill in slush form, white water increases the temperature and consequently raises the freeness to an extent which may fully counteract the effect of the "flour." If the pulp is used as laps, heat or other means must be used to restore the freeness on the paper machine. Variations in the size and character of fibers in the stock and white water give varying results and should be studied with the aid of the microscope.-A.P.-C.

BEATING

K-7 What can be learned from Fiber-Length Measurements in the Beater? SIGURD SMITH. **Papierfabr.** 21, 301-303 (June 24, 1923); **Paper** 32, No. 14, 5-6, 17-18 (July 25, 1923). A part of the article is devoted to microscopic technique; the remainder considers the results of several fiber-length experiments carried out in the beater. It was found that with a constant roll pressure of 540 kg. there were less fibers cut with a stock consistency of 6.5 and 6.6% than with a consistency of 6.1%.-J.L.P.

K-7 A Washing and Bleaching Hollander with a Washing Drum, or a Filter Bottom? ANTON D. J KUHN, **Wochlb. Papierfabr.** 54, 1918-1920 (July 7, 1923). By using the Gossler filter device, in the bottom of the hollander, a more uniform bleaching and more thorough washing of the stock is possible than with the washing drum.-J.L.P.

K-7 K-1 Precision in Beating Paper Stock. ARTHUR B. GREEN, **Paper Mill** 47, No. 21, 14, 42, 44 (May 26, 1923). A discussion of the use of the Green beater drag (U.S. pat. 1, 321,736) showing that it must be designed and used to meet the conditions in each individual mill. The law underlying beating is stated as follows: "If the mixture of fiber, mineral matter, coloring and water, as furnished to the beater, be regarded as a fluid mass, the curve of its frictional resistance measured throughout the run and plotted bears direct relation to the paper making characteristics of the stock. If the furnish be repeated in the same beater, the mixture, the quantity and the density being the same, then a duplication of the curve of frictional resistance results in a duplication of the paper making characteristics of the stock." Precision control over the beating operation resolves itself into 4 steps: (1) An understanding of the law; (2) a study of the mill and its business in the light of the law; (3) the design of recording apparatus best adapted to these conditions; (4) a rearrangement of the methods of doing work, and the relationship between management and man necessary for applying the law in place of guess.-A.P.C.

K-7, 12 Apparatus for Testing the Wear of Beater Knives. World's Paper Trade Rev. 79, No. 17, 1428 (Apr. 27, 1923); **Paper** 3, No. 5, 12 (May 23, 1923). The principle of the invention is the determination by suitable means of the distance that the roll is moved with respect to the bedplate or the bedplate with respect to the roll in order to maintain a predetermined greatest intensity of contact between the roll and the bedplate. Various methods of construction of the apparatus are described.-A.P.-C.

SIZING

K-10 Colloid-Chemical Studies on the Rosin Sizing of Paper WO. OSTWALD and R. LORENZ. **Kolloid-Z** 332, 119-137, 195-209 (1923); **Paper** 32, No. 11, 7 (1923). By the acidification of a solution of sodium resinate gamma pinic acid, melting about 75°C., is precipitated. By repeated crystallization from dehydrating solvents, such as absolute alcohol or glacial acetic acid, a crystalline abietic acid, melting 16.1 to 163°C is obtained from this. Thus there is a series of acids differing in their content of colloidal water from gamma-pinic acid, the most highly hydrated, to abietic acid, which is anhydrous. The possible range of sizing media is comprised between natural sodium abietate on the one hand and a colloidal hydrosol of abietic acid free from alkali on the other. The most concentrated hydrosol, containing 0.61% of abietic acid, was obtained by adding an alcoholic solution of abietic acid to ice-cold water, which had been freed from carbon dioxide by the passage of a current of purified air, filtering the emulsion and concentrating in vacuum below 50° C., until coarse flakes separated, then quickly filtering and cooling with ice. The behavior of various size preparations has been studied by filtration, ultrafiltration, dialysis, diffusion, ultramicroscopy and electrophoresis. Dilute 1 to 5% solutions of neutral sodium abietate pass through ultrafilters unchanged, they are diffusible and the state of dispersion is molecular. At dilutions of 0.5% and below, hydrolysis takes place with opalescence due to the separation of colloidal abietic aid. This has the properties of a suspensoid colloid and the commercial size emulsions are not emulsions but suspensions of abietic acid in molecularly dispersed sodium abietate. The colloid has a negative charge. As regards the relations of the viscosity of size solutions to temperature, highly concentrated solutions of sodium abietate show the properties of a gelatinisable emulsoid colloid. In dilute solutions the viscosity of neutral sodium abietate is relatively small, and suspended colloidal abietic acid has no effect on viscosity. The chemical equilibrium in the hollander involves wide reaching hydrolyses of the sodium resinate and the aluminum sulphate. These hydrolyses are strongly influenced by the salts in the water and by the free resin of the size. The sulphuric acid liberated from the aluminum sulphate neutralises the peptizing action of the sodium hydroxide from the sodium resinate. The flocculating action of electrolytes on abietic acid hydrosol has been studied quantitatively. It is more powerful the greater the charge of the action, while the peptizing influence increases with the charge of the anion. Thus the molecular quantities of aluminum, magnesium and potassium in the form of chlorides required to produce incipient flocculation were in the ratios of 1 : 1,700 : 5,000, whereas in the form of sulphates they were 1 : 50 : 150. The influence of calcium salts in the hollander water is strongly flocculating; that of the sodium salts is less but not inconsiderable. Carbon dioxide has a week flocculating action. Certain additions to commercial sizes act as protective colloids preserving the dispersion of the resin particles. The aqueous extract of casein is a powerful protective agent, but an alkaline solution of casein itself is flocculated by aluminum sulphate and carries down the abietic acid by occlusion. Potato starch paste delays flocculation to some extent; small proportions of gelatin have a very powerful stabilizing action. These stabilizing colloids act similarly to mordants, preserving dispersion and constituting a bridge between the cellulose and the resin. Experiments by electrophoresis showed that pure paper pulp in water migrates to the anode and consequently the pulp in the hollander carries a negative charge. If paper is ground up with strong aluminum sulphate solution it then migrates to the cathode; colloidal aluminum hydroxide carries a positive charge. Colloidal abietic acid carries a negative charge and behaves in exactly the same way as pure paper pulp. Thus fiber and colloidal resin are two similarly charged colloids which repel one another and a permanently sized paper cannot be made by precipitating the size with acid alone. Without the positive charge of the aluminum hydroxide the union between the fiber and the resin is due only to mechanical and capillary action. If too large an excess of aluminum sulphate be used the charge of the whole system becomes positive and the quality of the sizing is impaired as the positively charged components repel each other. Thus, according to the electrostatic theory of sizing, a firm, permanent sizing is only obtained when the condition is isoelectric, that is, when the positive charge of the aluminum hydroxide fixed in the pulp balances the negative charges of the paper and abietic acid. The effect can be demonstrated in a series of graduated cylinders containing paper pulp to which is added a constant quantity of abietic acid hydrosol. The volume of sediments is constant after a number of hours. If then increasing quantities of a mixture of alumium sulphate and colloidal aluminum hydroxide sol be added to the pulp in the cylinders the volume of the sediments decrease in regular order to a minimum and then increase again. This is due to the repulsion of the components of the negatively and positively charged systems, the maximum compactness corresponding to the isoelectric mixture.-C.J.W.

K-10 Montan Wax Soap for Paper Sizing. FR. KELTING. Ger. pat. 376,761. **Papierfabr.** 21, 307 (June 24, 1923). Montan wax, purified at a high temperature with zinc chloride solution, is saponified in a concentrated solution of sodium hydroxide. The process is carried out in an autoclave under a pressure of about 6 atmospheres and a temperature of 120°C. J.L.P.

K-10 New Theories on Rosin Sizing. EMIL HEUSER. **Papierfabr.** 21, 289-294 (June 17, 1923). An address dealing with the historical as well as the more recent side of rosin sizing.-J.L.P.

A-15 A Theoretical Discussion of the Reactions of Paper Making. JESSIE E. MINOR. **Paper Trade J.** 76, No. 23, 55-59 (June 7, 1923). A brief review of Loeb's "Donnan membrane equilibrium theory" with a discussion of its application to cellulose and the colloidal conditions in paper making, from which the author concludes: The Donnan membrane equilibrium seems to be the cause of the swelling of fibers in an alkaline solution and of the viscosity, and at least partially of the electrical charges of the solution. The relation of the Donnan membrane theory on the effect of acids on cellulose will need further study. It is possible that swelling does occur for a very slight range below the isoelectric point. At present there seems to be little evidence for the existence of a Donnan membrane when the pulp is in an acid solution. The reactions of sizing seem to be entirely independent of the Donnan membrane equilibrium except in as far as the hydration or swelling favors the reaction. The work of Sieber would seem to indicate that the reactions between rosin and alum were in accordance with the Donnan membrane theory. The theory for the mechanism of the sizing reaction suggested agrees with the present known theories and mill experience and might be a satisfactory working hypothesis until further evidence on the subject has been gathered.-A.P.-C.

DYEING

K-8 Production of Colored Effects on Paper. FARBWERKE VON MEISTER LUCIUS & BRUNING. Ger. pat. 375,512. **Papierfabr.** 21, 287 (June 10, 1923). Instead of using the dye solutions stated in Ger. pat. 357,990, suspensions of dyestuffs, as organic and inorganic pigments, or colored substances, as Fuller's earth are recommended.-J.L.P.

K-8 Sources of Trouble in the Coloring of Paper Stock and their Elimination. H. DIERDORF. **Zellstoff U. Papier 3, 105-109 (May 1923).** Bleached groundwood should be entirely free from chemicals before it is colored; chemical residues often cause much trouble. In the selection of dyestuffs for chemical wood pulps the degree of beating is of special importance. Basic colors have less affinity for bleached than for unbleached pulps. Each dyestuff should be dissolved separately, preferably in hot water, and added in that way to the beater. Some dyes do not dissolve readily owing to the hardness of the water; distilled or condensed water should be used. Oftentimes colors decompose or precipitate in solution on standing. The filtering of the solution before adding to the beater is recommended.-J.L.P.

K-8 Surface-Colored Papers. **Paper Making** 42, 174-175 (May 1923). A brief description of the preparation of red alizarine lake and of indigo blue paste and of the method of using them in the manufacture of surface-colored papers.-A.P.-C.

(Continued on page 1014)

PULP AND PAPER NEWS

Mr. Troy Blinco and Mr. L. W. Campbell of the Laurentide Company captured the doubles tennis championship for the St. Maurice Valley and were awarded the trophy presented by Mr. Fred J. Argall of Three Rivers.

His many friends will be glad to hear that Mr. H. Grindstad, sulphate superindendent of the Brompton Pulp and Paper Co., is now entirely recovered from a long and serious illness. He was recently a visitor at La Tuque.

In a recent contest at the net, Messrs. Rossiter and Elvinas, representing the Montreal office of the St. Lawrence Paper Mills defeated Messrs. A. M. Creighton and Boulianne of the mill office at Three Rivers.

Mr. Hjalmer Loken has gone to East Angus, where, it is reported, he has accepted a position with the Brompton Pulp & Paper Co.

George C. Winlow, sales manager of Lincoln Mills, Toronto, left recently on an extended business trip to Winnipeg and the Coast. He will call upon the paper trade in all the leading cities of the West.

W. H. Sherriff of Hodge-Sherriff Paper Co., Toronto, left this week on a business trip to Vancouver and all intermediate points. He will be absent about a month.

George Davidson, sales manager of the Howard Smith Paper Co., Toronto, has returned from an extended sojourn to Western Canadian cities and reports trade in the fine paper line in the prairie provinces as improving.

Another trade publication has made its appearance in the "Fur Trade Journal of Canada." It is published at Oshawa by Robt. G. Hodgson in the interest of the fox and fur farmer.

N. E. Wainwright of the sales staff of the Provincial Paper Mills, Toronto, has returned from a recent business trip to Winnipeg.

A. Huntley, of the Hodge-Sheriff Paper Co., Toronto, was in Montreal last week meeting Mrs. Huntley and family who were returning from an extended visit to the Old Country.

A new cover stock has been put on the market by the United Paper Mills, Toronto, known as "Dominion." In a contest for the selection of the most appropriate name the prize of $25 offered by the United Paper Mills was captured by W. A. Sutherland, of Toronto, executive secretary of the Toronto Typothetae. There were some 80 suggestions received from contestants.

A. G. Pounsford, manager of the Port Arthur division of the Provincial Paper Mills, was in Toronto last week on his way to Cincinnati where he will spend a well earned holiday.

Another weekly newspaper has gone out of business after thirty-three years publication. The Atwood Bee has been purchased by the Banner, of Listowel, with which it will be amalgamated.

There is much activity on the site of the Great Lakes Paper Co. at Fort William where the new ground wood mill will be erected at a cost of $800,000. Tracks have been laid leading down to the plant and the work of pouring concrete for the footings and foundation is now under way. There is every indication that the mill will be completed within the allotted time of one year.

Arrangements are proceeding satisfactorily for sixth annual convention of the Canadian Paper Trade Association which will be held in the Windsor Hotel, Montreal, on Tuesday and Wednesday, October 16 and 17. An interesting program has been prepared and the delegates will be entertained by the members of the Montreal trade and the paper manufacturers.

John F. Ellis of Toronto, who will, on November 9 next, celebrate his seventy-eighth birthday is Honorary President of the Association. George Wilson of Winnipeg, is the President; J. B. Larkin of Montreal, first vice president, and R. I. Finlay of Toronto, second vice president. E. S. Munroe of Toronto is the treasurer and N. L. Martin of Toronto, general secretary of the organization while C. V. Syrett, of Toronto, is vice-president in charge of the coarse paper division.

An interesting and edifying address was delivered before the Toronto members of the Board of Trade last week by His Honor, Harry Cockshutt, Lieut.-Governor of Ontario, on "Impressions of the Far North." He predicted that the T. and N. O. Railway would in time be extended to Hudson Bay shores and spoke of the great assets of timber and pulp wood which he witnessed on his recent trip through that country. His Honor also gave an address along similar lines this week before the Canadian Club in Toronto and was enthusiastically received.

M. A. James of Bowmanville, who for forty-five years has been proprietor and editor of the Bowmanville Statesman, last week celebrated the fiftieth anniversary of his wedding. He is one of the most widely known weekly publishers in Canada.

T. H. Preston, of Brantford, Ont., publisher of the Expositor and President of the Canadian Daily Newspapers Association, who underwent an operation recently in Johns Hopkins hospital Baltimore, Md., is recovering.

Hon. James Lyons, Minister of Lands and Forests for Ontario and Hon. Charles McCrea, Minister of Mines, will leave shortly on an extended trip throughout Northern Ontario and obtain first hand knowledge of the progress and needs of that country territory.

The Board of Trade of Sault Ste. Marie, has received word from Hon. James Lyons, Minister of Lands and Forests that no decision in regard to the opening up of the Mississauga Forest Reserve will be made until the report of the department surveyors has been received. The surveyors are now at work going over the reserve to determine the condition of the timber there.

C. R. Stewart, who has been manager of the Pembroke, Ont., bureau of the Government employment service of Canada, has resigned. He has taken a new post as senior assistant of the employment department of the Abitibi Power and Paper Co. at Iroquois Falls, Ont.

Albert Robitaille of Montreal died recently after a long illness, aged thirty-two years. He was an accountant and a brother of Davilla Robitaille, accountant of the Canada Paper Co., Montreal.

According to the view expressed by one of the directors of the Hollinger gold mine, there is no possibility of any objections that the Abitibi Power and Paper Co. might have to Hollinger's power development on the Abitibi River. He says the plans of the project have been approved by the Ontario Government giving the mining people the right to go ahead with the work.

New machinery has been installed in the groundwood plant of the Glengarry Pulp Co. at Cornwall, which has increased the capacity of the mill to thirty tons daily. The company is very busy at the present time.

A. M. Huestis, of Toronto, Canadian representative of the Kalbfleisch Corporation, New York, and Mrs. Huestis, who have been spending the past few months on an extended visit to Great Britain and Europe have returned home.

NEW BRUNSWICK NEWS

The latest announcement from the Nashwaak Pulp and Paper Company, St. John, N. B. is that the plant will reopen in the near future, although no definite date has been announced. This mill was closed suddenly three weeks ago, notices being posted to the effect that the mill would suspend operations for an indefinite period. No official reason for the suspension was advanced, but unofficially, it is reported the increases in rates of the New Brunswick Workman's Compensation Board, and a slump in the market were contributing factors. While the plant has been idle, part of the crew of employees has been retained to make necessary repairs and cleaning.

Indications are that the royal commission formed to investigate the pulpwood situation will hold sessions at St. John, Fredericton, Chatham, Bathurst and Edmunston in New Brunswick, although but two dates have been officially announced—St. John and Fredericton. The home of one of the members of the commission R. V. McLellan—is in the latter city. The St. John session will follow that held at Digby, N. S. the members crossing the Bay of Fundy to St. John.

Most of the pulp and paper companies operating pulpwood cutting crews in the New Brunswick woods, will hereafter insist on the anti-smoking rule be enforced by their foremen, while in the woods. This means that smoking is taboo except in the camp. In some instances men have been dismissed for disobedience of this rule. In the past workmen employed by pulp and paper companies have in a number of cases been blamed for the origin of forest fires.

WAYAGAMACK WORKING ON ODOUR

The Wayagamack Pulp and Paper Co., Ltd., are now engaged on certain extensive works with a view to eliminating the highly objectionable odour, incident to certain processes of their manufacture. The chief change to be made is in the fuel used in the preparation of a certain acid required for the making of the Kraft brand of paper, and it is believed that the substitution of oil-fuel will greatly improve, if not actually eliminate all unpleasant odours.

A. Des Moines, Iowa firm has been entrusted with the contract for the building of a large oil tank, while Germain & Freres, local plumbers, have been given the contract for laying the pipes from this tank to the digester. The work will likely be completed this fall, and, while it is being done more or less as an experiment, satisfactory results are expected.

SPEEDY MACHINES OF OTHER DAYS

Ballston, Spa., N. Y.
September 19, 1892.

To the Editor of the Paper Trade Journal:

In these days of fast running machines we hear considerable about 300 feet and over but we have come to the conclusion that 300 feet and over are run by wind.

Hearing much about a certain mill we took pains to go and see these greased lightning machines and on arriving there saw one machine running 230 and the other 220 feet per minute, which is 20 feet slower than we are running and we don't call it a fast machine either. Speaking to the superintendent he informed us that the machine will run 310 feet just as well and as safely as 240 and will get to that speed as soon as the new smoke stack is finished which is to be 180 feet high. At first they only intended to build that stack 150 feet but thought they could get more speed on the machines by adding 30 feet as it would make the draft on the machine so much better. (This mill is in the state of New York and we understand it will run at a Nancy Hanks gait after this stack is finished.)

It is all well enough to run at 300 feet a while until the machine room is full of broke and then the machine drops back to 210 feet. Those old gags used to go but they don't go now.

Two Papermakers.

ACKNOWLEDGEMENT FROM THE ENEMY

By "A WET"

A writer in Collier's National Weekly says:

"I am a wet. I have always been and always shall be. All my best friends are wet. I am not a steady, day-in and day-out drinker, but I get away with my share of the stuff even in these Volsteadian days.

"I rarely go anywhere that I do not find liquor easily accessible. I have always been thrown into or sought the company of drinking men. They are the kind of men I like—my kind."

He says that in the last few months he has visited thirty-six of the forty-eight States of the Union. He says that in any city he could buy liquor, but that it is becoming more and more difficult to do so.

He found nowhere any sentiment in favor of the return of the saloon, and everywhere, except in the East, a strong and growing sentiment in favor of the prohibition laws. He closes his article with this statement:

* * *

"The great mid-West is joining hands with the Far West and the South in the movement to make America bone dry. The Eighteenth Amendment is an accepted fact almost everywhere west of the Alleghany Mountains, Iowa, Nebraska, Kansas, the Dakotas, and other States that I visited in the last few months are dry — the sentiment is dry and there is a growing respect for the Volstead Act. None of these States is bone dry as yet but they are on the way.

"I was loth to admit it even to myself, but there is an abundance of evidence that a great 'dry wave' is rolling eastward, slowly but surely grinding down opposition to prohibition.

"And, riding the crest of this wave are the clean, substantial citizens of the nation — the John Smiths and the Tom Browns — and, always, their wives and sisters and mothers are riding at their sides.

"Some day we wets are going to awaken to find that an overwhelming majority of the people of the United States are weary of boot-leggers and dry-law violators.

"Some day and that day is not far distant, these people are going to rid the country of the bootlegger and run-runner just as the Vigilantes of the fifties rid the California mining camps of undesirable gamblers, gunmen and prostitutes."—Ex.

(Continued from page 1011)

K-8 Coloring Paper. KENNETH T. KING. **Paper Mill** 47, No. 22, 46, 52 (June 2, 1923); **Paper Ind.** 5, 489-490 (June 1923). Brief discussion of the following points: prevention of mottled fibers; differences in color absorption in kraft and sulphite pulps due to variation in cooking methods; foaming, two-sided effect; and water conditions.-A.P.-C.

BLEACHING

H-5 Bleach Studies on Wood Pulps. II. CARL G SCHWALBE and HERMANN WENZL. **Papierfabr.** 21, 279 (June 3, 1923); 281-282 (June 10, 923). Acidification of the bleaching bath with carbon dioxide gives only positive results when the acid is added to the alkaline liquor before addition of the pulp. The combined acid-alkaline process attacks the cellulose and leads to the formation of oxycellulose. Yellowing of bleached pulp occurs when the chemicals have not been completely washed out. Yellowing increases with the increase in the alkalinity of the bleach solution and the decrease in the temperature of reaction. An acidification of 0.1%, or less, with dilute acid has a favorable influence on the bleaching of pulp. (Also in **Paper** 32, 10, 9-10, 21 (June 27, 1923); No. 11, 5-6, 28 (July 4, 1923).-J.L.P.

DRYING

K-12 Drying of Paper. F. GREWIN and K. LINDERSTAM. **Swensk Pappers Tid,** 26, 145-149 (1923). Several equations covering moisture and heat relations in drying paper and five graphs recording data obtained are given together with a resumé of desirable conditions.-C.J.W.

Heat Economy in Drying Paper and Cellulose. H. RYDGREN. **Papir-Journalen** 10, 89-92, 95-102, 109-111, 116-118, 123-125 (1922). These phases have been investigated minutely: drying machines (with diagrams), effect of summer and winter temperatures, loss of heat through walls and roof, ventilation passage of heated air over the drying machines, loss of heat in the chimney, dimensions of pipes, heat batteries, intake of air, use of waste heat and use of condensed water. Curves and equations are included.-C.J.W.

PAPER MACHINE

K-12 Foam on the Paper Machine. ANON. **Zellstoff U. Papier** 3, 113 (May 1923). Some of the causes for the formation of foam on the paper machine are: action of aluminum sulphate on carbonates in the water to give carbon dioxide, sizing materials, fillers, organic substances in solution and suspension, certain dyestuffs especially crocein scarlet and orange, pigments, and the fibers themselves. The addition of small amounts of oil to the beater when it is washed out is very effective in reducing the foam.-J.L.P.

K-12 Device for Transferring the Paper Sheet from the Couch to the First Wet Felt. JOSEF HRASDIRA. Ger. pat. 375,257. **Zellstoff U. Papier** 3, 124. (May 1923). Compressed air is used to lift the sheet from the longitudinal wire.-J.L.P.

K-12 Suction Rolls. HAROLD BING. **Paper Mill** 47. No. 22, 24, 76 (June 2, 1923). A discussion of the three types of Millspaugh suction rolls (couch, press for cylinder machines and press for Fourdrinier machines) and of their merits.-A.P.-C.

K-2 Suction Rolls. W. H. MILLSPAUGH. **Paper Ind.** 5, 496-498 (June 1923); **Paper Mill** 47, No. 26, 4, 10 (June 30, 1923). Figures are given of the performance in various mills to show the advantages of Millspaugh suction couch and press rolls on news and book machine. Troubles caused by suction rolls are briefly discussed.-A.P.C.

K-12 Drier Felts. GEORGE F. KENNEDY. **Paper Ind.** 5, 483-484 (June 1923). Brief description of the characteristics of cotton drier felts.-A.P.-C.

K-12 Felts: Their Efficiency and Life. F. W. VICKERY. **World's Paper Trade Rev.** 79, 1500-1508, 1562-1566, 1580-1582 (May 4, 11, 1923); **Paper Making** 42, 170-173 (May 1923); **Paper Makers' Monthly J.** 61. 201-207 (May 15, 1923). **Papeterie** 45, 470-481 (May 25, 1923; **Papier** 26, 561-565 (May 1923); **Paper** 32, No. 6, 6-10, 21-22 (May 30, 1923); **Paper Mill** 47, No. 25, 16, 18, 38, 44, No. 26, 38 (June 23, 30, 1923). A discussion of the factors involved in the wear of felts on Fourdrinier machines with a description of the Vickery felt cleaner and a discussion of the increased life of felts obtained by its use.-A.P.-C.

Also in Pulp and Paper Mag. 21, 889-891, 915-917 (Sept. 6-13, 1923).

K-12 M-4 Automatically Controlled Hydraulic Power Transmission as Applied to a Paper Mill. J. W. ROSE. **Paper Maker and Brit. Paper Trade J.** 65 575-577 (May 1, 1923); **World's Paper Trade Rev.** 79, No. 12, 988-990, No. 14, 1137-1140 (Mar. 23, Apr. 6, 1923). A discussion of the possibility of applying the hydraulic transmission variable speed gear to paper machine and calender drives.-A.P.-C.

K-12 The Removal of Electricity from Paper and Fabrics. W. H. CHAPMAN. **Pulp & Paper,** 21, 627-628 (June 21, 1923) Static electricity in paper is removed by means of a type U inductor, consisting of a steel tube 1·5 in diameter, having a slot on one side extending from end to end. The slot is filled with little porcelain blocks, each of which has in it a copper sleeve with a point attached, which projects through a hole flush with the outside surface of the porcelain while the sleeve surrounds a well-insulated cable that passes through the center of the tube. Each point receives its charge by induction from the cable and can receive only as much as is due to the surface of the sleeve, which is small. The inductor is placed across the machine and the material passes at a distance of 2 to 3 in. The points ionize the surrounding air, which discharges the static electricity on the paper. The latter can be passed at 1,000 ft. per min. and be completely neutralized.-A.P.-C.

K-12 Electrical Paper Machine Drive. ENGLISH ELECTRIC CO. LTD. Eng. pat 193,458. The invention provides a means for providing an adjustable speed interlock between the motors driving the various parts of the machine so that alternating current can circulate between the motors. Adjustable frequency changing devices can be arranged between the auxiliary connection and the motors.-A.P.-C.

K-12 Changing Machine Wire. BELOIT IRON WORKS. Eng. pat. 193,113. In order to facilitate the replacing of the wire in Fourdrinier machines, the lower couch roll is arranged to be raised and adjusted towards the table while the pond together with one of the deckle wheels can be raised and retained in different positions relatively to the head box to clear the table of its wire.-A.P.-C.

K-12 Dandy Rolls. J. H. LOWE. Eng. pat. 192,950 The dandy rolls are provided with a gauze tablet which carries a detachable watermark. The tablet is fixed to the rolls by press buttons or similar fastenings. The arrangement permits the free interchange of water marks and the use of one dandy roll for any number of marks instead of one roll for each watermark. A.P.-C.

Woodlands Section

HARD WOODS THE PROBLEM OF THE NORTH

By O. M. PORTER
Secretary-Treasurer, The Woodlands Section,
A.P., & P.A.

During a recent trip in company with the Swedish Minister through the Maine forests and eastern Quebec I was tremendously impressed with the seriousness and enormity of our hard wood problem as regards the paper industry.

The forest showed evidence of the changing lumbering conditions of the country. In Maine, for instance, we saw remnants, or at least traces, of the earliest white pine logging which was later followed by selective cutting of spruce, and finally heavier cuts of both spruce and balsam, until now the forests, at least of the territory through which we passed, can be classed only as a mixed hard wood type. What the future will be, who can predict! The land once supported heavy stands of pine, spruce and fir. Today they are covered with birch, aspen and maple, with a more or less suppressed, advanced soft wood reproduction.

Need for Soft Woods

The practice of forestry in this country is dependent on transportation, fire prevention and taxation. At present the utilization of much of this vast hard wood stumpage is economically impossible. The paper industry, apparently, must have soft woods. The United States must become increasingly independent as regards its domestic supply of soft woods. The time may come when Canada will need its forest resources for its own industries. We cannot secure adequate supplies of soft woods from the other nations of the globe. We must grow timber! To grow timber successfully we must have complete fire prevention, and to use that which we have grown we must have adequate systems of cheap transportation.

The paper industry of the United States will undoubtedly plant trees. It will grow its soft wood timber. There will be an expansion of the paper industry in the South, and to a certain extent in the Pacific northwest, as well as in Alaska. The industry was established in New York and New England, and it will always be an important factor in the economic life of that region. This means that for its continual operation it must and will have adequate supplies of reasonably cheap pulp wood.

Paper Industry and Forestry

The paper industry is commencing to practice forestry. It will find ways and means of utilizing a portion of its hard wood crop, which is now encumbering the land and going to waste. The increased demand for papers, and the increasing consumption of pulp wood will both hasten the day when the paper companies will realize the value of forest ownership, forest management and forest development. Paper companies can and will practice forestry, and the time is coming when the forester will be considered of very much greater importance in the personnel of pulp and paper companies than he is at present, because on the forester will actually depend the continual operation of the mill. He must see that there are successive crops of pulpwood for the grinders and digesters, and it is only through the application of his knowledge that this will be assured.

I believe that pulp and paper companies must control sufficient forest land to provide a large proportion of their supplies of raw material. I believe that the utilization of both the Southern pine and our Northern hard woods should be carefully studied. I believe, also, however, that the time is not far off when the actual creation of soft wood forests close to the mills will be economically possible, and eventually extremely profitable.

The paper mills of the United States, according to the 1919 census used $5,114,426 worth of manila stock in that year, and paid $3,694,947 for straw.

BOOK REVIEW

The hardwoods of Australia and their Economics. By Richard T. Baker, Sydney, William Applegate Guillick, Government Printer.

It is roughly estimated that the number of species of trees growing in Australia is about five hundred, and of these the genus Eucalyptus accounts for some two hundred. The Eucalyptus covers an enormous area of the continent — hundreds of thousands of square miles, all the timbers of this family are valued for their hardness and weight, and they are remarkable for the rapidity of their growth. The author quotes the case of an Australian gum tree, which made as much hardwood in twenty-four years as an English oak in two centuries. This is enough to show what enormous potential wealth Australia possesses in her timbers.

The present volume has been designed by the author, who is Curator and Economic Botanist, and Lecturer on Forestry in the University of Sydney, to make known to Australia in particular and to the world in general the qualities of the various hardwoods which flourish on the continent, and is especially written for architects, saw-millers, engineers, cabinet-makers and foresters. The first part deals with the physical properties of timbers, a particularly interesting section of which is concerned with their comparatively combustibility. Now that naval construction, on a large scale, is being undertaken in Australia, it is important to find woods of low combustibility for internal use in ships of war, and Australia is fortunate in having a large supply of such timbers. A list of woods arranged in the order of their fire-resisting qualities will be found exceedingly useful in this connection.

Part II. contains descriptions of the various species of hardwoods in botanical sequence. This occupies 350 pages. A great number of the sections are illustrated with coloured plates which give an excellent idea of the various timbers, both as to shade and grain.

Part III. is technological, and deals with the uses of the woods in architecture, engineering and for general purposes. Some space is devoted to the problem of seasoning, both by natural processes and by kiln-drying. Various methods of preserving timber are discussed.

and number of photographs are given illustrating the various uses of timber in building and fitting railway cars, bridges, wharves jetties, and in the manufacture of furniture. The book has been compiled with much care, and contains a great amount of information, which should go far to popularise the use of Australian timbers. — J. Roy. Soc. Arts, May 28, 1920.

STUMPAGE SALES

Fredericton, N. B. Oct. 5. — Complaints that large holders of timber limits in New Brunswick, who are not in a position to carry on operations on areas burned over by forest fires during the past year are refusing to sell stumpage to others who are ready to operate on the limits, as provided by the Order-in-Council passed by the Provincial Government some time ago are being received by the Government, it was learned today.

Premier Veniot said that the matter would be taken up by the Government at its present meeting.

The Government have granted an application of Col. T. G. Loggie, I.S.O., Deputy Minister of Lands and Mines for two months' leave of absence.

TIMBER LIMITS SOLD

Quebec — A large timber limit and lumber transaction affecting a local company was executed in Quebec last week, when the holdings of Messrs. W. and H. Kennedy, known as the Lake St. Joseph Limits, including saw mills, property, etc., were sold to the Laurentide Company, Limited.

The limits consist of about 350 square miles, comprising almost all the land surrounding Lake St. Joseph, which has not already been sold for summer residences.

Fifty miles of the limits are fee simple lands, the balance under government lease.

PULPWOOD APPEAL DISMISSED

Toronto, Oct. 1.—An unusual case came up in the Appellate Division this morning, when the appeal of Fred Little from the judgment at the trial awarding him $1,612.26 for pulpwood supplied under contract to the St. Maurice Lumber Company, was dismissed with costs. The unusual feature is that before judgment was given at the trial, the defendants had agreed to settle the case for $2,000 and costs.

FIRE CONTROL IN FORESTS SUCCESS

Victoria, B. C., Oct. 4. —Preliminary surveys of reports reaching the Forestry Department shows that the forest fire control during the season to September 30 has been most successful and that losses have been the lightest since 1913. Damage is reported at $520,000, of which $130,000 was personal property and equipment.

THEY REMEMBER THE FIRE

Toronto, Oct. 4. — The following telegram was received tonight from the town council of Thornloe, in New Ontario.

"New Liskard, Oct. 4:

Thornloe citizens gathered tonight to thank God for safe deliverance one year ago from the fire. Wish also to send thanks to our helpers in Old Ontario and other parts. 'Lest we forget.'

(Signed) "TOWN COUNCIL."

When we accustom ourselves to deny the body in lesser matters, we are surely storing up power for victory in some great temptation.

THE A.B.C. OF THE PULPWOOD EMBARGO

Extracts from letter of F. J. D. Barnjum to the *Journal of Commerce.*

In view of the grave national situation in connection with our forest resources and the many foolish and wilfully misleading statements that are being circulated regarding the pulpwood embargo, I feel it incumbent on me to summarize conditions.

My main contention is that what wood it may be necessary to cut in Canada shall be manufactured in Canada so that not only Canadians may receive the full benefit of their own devastation, but that the wood shall be manufactured at or as near as possible to the district where it was produced, so that the farmer on whose land it was cut may not only have a market nearby for his wood, but also have a mill built and a town developed that will provide a home market for his farm produce as well as furnish extra work for himself and family.

Is there a man or woman in the whole Dominion of Canada who will say it would not be better for the country to manufacture pulpwood at home, thereby leaving $50 in the country for every cord of wood cut, instead of exporting it and bringing in only the $8 to $15 per cord which is now being obtained?

This influx of new mills would not only take a matter of one or two years but would begin instantaneously as the supply of newsprint paper in the U. S. must be maintained and if they cannot ship the raw wood across the line to be manufactured in their own country, they will not only be forced immediately to move these mills to Canada but they will be only too glad of the opporunity afforded to manufacture their pulp or paper so near home, rather than be forced to move to the Pacific Coast where they would have to ship the manufactured product three thousand miles to the great consuming centres. Practically all the machinery from existing mills could be moved to Canada and their power in the U. S. sold for other purposes at a sufficiently high figure to enable them to acquire new sites in the Dominion and sufficient left to more than pay the cost of the erection of new mills in this country so that no one in the transaction would be injured and, what is of first importance to us, Canadians immeasurably benefited thereby.

In any sections of Canada not served by water power the wood can be utilized by the erection of sulphite, sulphate or soda pulp mills, none of which require any water power for their operation.

In all the short-sighted and silly arguments advanced against the embargo, the public good is entirely lost sight of as completely as if such a thing as the public were a nonentity, or, in other words, it is simply a case of "the public be damned," and only the interest of a few foreign exploiters is to be considered.

When the so-called selfish interest of the Canadian Pulp & Paper Industry is referred to, the important fact is also lost sight of that without this industry Canada would be practically bankrupt to-day as this industry is one of the financial bulwarks of Canada. The wood using industry is now on an equal with agriculture as a revenue producer, and without it not only would thousands of employees and whole cities and towns and farming communities be put out of business, but our newspapers would be forced to import high priced newsprint paper.

UNITED STATES NOTES

Claiming that the liabilities of the American Writing Paper Company exceed its assets by $13,000,000, Emanuel W. Kaiser, a stockholder filed a petition October 2nd in the United States District Court, Boston, for the appointment of an ancillary receiver. A hearing in the case has been ordered for October 15 by Judge Anderson. According to the bill of the petitioner, the assets of the company are approximately $22,149,896, and liabilities including common and preferred stocks are $35,128,158. A depreciation of the company's property amounting to $1,000,000 resulted from the recent strike of stationary firemen in the Holyoke paper mills, which caused the factories there to close for two months, the bill states. It is also asserted that the decision of the company to accede to the strikers' demands for a 7 cents an hour increase, making their pay 75 to 80 cents an hour, will increase the operating cost of the company by $750,000 a year. The company is being conducted, according to the bill, by a creditors' committee, and a final allegation is made that it is being conducted at a loss and in a manner "prejudicial to the interests of creditors and stockholders." The directors of the company consider the application for a receiver as wholly unauthorized and unjustified. It was stated following a meeting of the committee which has been formulating plans for the rehabilitation of the company's finances that the petition will in no way interfere with these plans. William Mason Smith, counsel for the company, declared that the company is solvent and that the action was not well founded and that therefore the petition would be opposed.

Escaping chlorine gas in the paper mill of Dill & Collins, Philadelphia, overcame forty-five persons, including six firemen, last Thursday. Ten of the victims are in serious condition. Mill employees in the bleaching room detected the odor of the gas, which came from a defective valve. Before all were able to leave the room, thirty were overcome and had to be carried from the place. Officials of the mill summoned city firemen, who attempted to dispel the poisonous vapor by playing streams of water on the bleaching room. But the gas came through the walls of the room and firemen were overcome in their places on the hose lines. Engineers of the plant finally checked the escape of the gas while firemen managed to clear the air after playing streams of water on the bleaching room for an hour. The victims were treated at the scene, while the more serious cases were removed to a hospital.

Secretary of Agriculture H. C. Wallace has sent out a call to leaders in the American pulp and paper industry for the formation of an advisory committee to work with the Department of Agriculture in formulating and carrying out its forestry policies which relate to the supply and use of timber in making paper and its kindred products. Secretary Wallace states that the creation of such a committee, composed of men intimately concerned with the pulp and paper industry, will, in his opinion, insure thorough consideration of requests for advice as well as bring forth advice itself which will deal in a searching and practical way with the fundamental problems of the industry. Among the activities of the department closely concerned with the pulp and paper industry are the research in pulp and paper-making conducted at the Forest Products Laboratory at Madison, Wis., forest research in the growing of timber crops now under way at the various forests experiment stations, and the development of Federal and State policies for the production of timber upon the country's forest lands. Hugh P. Baker, Executive Secretary of the American Paper and Pulp Association, has been active in the formation of such an advisory committee and has conferred concerning the matter with Chief Forester Greeley and E. H. Clapp, Director of Research for the Forest Service. Among the prominent manufacturers asked to serve on the committee are George W. Sisson, Jr., President of the Raquette River Paper Company; Colonel W. E. Haskell, Vice President of the International Paper Company and E. B. Murray, Vice-President of the Union Bag and Paper Corporation.

Low water conditions in New England States were reported during the past week. Unless the situation improves in the near future, prices on many items may be affected.

Conservation will prolong for centuries the life of Northern Ontario's stand of woods used for pulp or lumber, according to the American Institute of Mining and Metallurgical Engineers. "The forest areas of Ontario," says a statement by the institute, "comprise 150,000 square miles. Every summer an average of 425,000 acres of forest is burned over. The forest protection at present consists of 1,000 men, scattered over 1,000,000 acres at a cost of $500,000 a year. Still greater fire protection is being widely advocated and will save millions of dollars annually."

A proposal for a rate change, according to the transportation bureau of the Philadelphia Chamber of Commerce, has been made by the Trunk Line Association. This would cancel commodity rates, less than carload, on wrapping and printing paper from points in New York, Jersey City, Elizabeth and Rahway districts to Philadelphia, Chester and Wilmington districts and restore general cargo basis.

The Chamber of Commerce of the United States has put to a referendum vote of more than 1,200 business organizations making up the chamber's membership a proposed national forestry policy, drawn up by a special committee. The proposals call for both Federal and State action for the purpose of assuring a permanent future supply of timber.

The South Centralia mill of the Nekoosa-Edwards Paper Company, built in 1887 by G. A. Whiting and G. Steele and known as the oldest pulp mill in the Wisconsin River Valley, is to be dismantled to make room for an addition to the Neekoosa-Edwards Company's hydroelectric plant. The addition, which will probably be built in the course of the next year, will double the power supply, increasing it from 2,800 horsepower to approximately 5,800.

The Markets

CANADIAN TRADE CONDITIONS

Toronto, Oct. 8, 1923. - The general tone of business in the pulp and paper arena still continues spotty. Some weeks an excellent demand is reported and the next there is a decided falling off. Business appears to be better in the smaller towns than in the larger centres of population and all weekly publishers are enjoying a good trade.

Book and writing mills are fairly well employed and prices rule firm on all ranges. Newsprint plants are busy and the general outlook is regarded as satisfactory. The fear of over production is not countenanced by leading authorities and the mills, which are now extending, are assured of a call for their product as soon as the new additions are ready to begin operations. Increased production is about keeping up with augmented demand and increased circulation of newspapers.

Manufacturing stationers are active in preparation for the Christmas rush and envelope plants are doing a fair business. A leading jobber remarked this week that the turn-over of his firm during the past three months had been ahead of last year in spite of the ups and downs of affairs. Mills generally are running with only a week to three weeks business ahead but the orders from day to day keep the plants in operation and, with the anticipated advent of better business from this out, there is little to fear. There may be no great rush of orders as buying is on a conservative basis. There is no speculative element in the market and basically conditions are sound and the outlook grows better each month. Paper box plants, which have been busy during the past month, report a slight falling off during the past few days. Board prices remain unchanged.

In the groundwood market the demand is exceptionally brisk and some mills are booked ahead for the next month. Prices have been advancing and now some producers are receiving as high as $50 at the mill for 60 per cent. air dry groundwood pulp. In other lines of pulp the situation remains unchanged.

So far as pulpwood is concerned there are varying opinions. Most mills report that they have sufficient wood in sight to cover their requirements for the next season, and fail to see anything on the horizon to warrant any material advance in prices. Help for the bush is becoming more plentiful with the return of many laborers from the West. In some localities in Northern Ontario there has been an ascent of one to two dollars but most operators declare there has been no great rush to purchase owing to the threatened embargo.

It is understood that the Ontario Government will not appoint a forest supervisor for the province which project was favored some time ago by the late Drury Government. The present administration under Mr. Ferguson has abandoned the proposal and the appointment of Major J. I. Hartt, of Orillia, as overseer of timber agents and Crown lands fills any need there might have been for a closer check-up on cutting and checking returns. Major Hartt, who is a well-known lumberman, is in sympathy with the new policy of Hon. James Lyons, Minister of Lands and Forests in connection with supplying the home market with more of the wood cut by settlers, and, on behalf of the Government, will make observations on the effect of the new policy in the various districts. That the program outlined by Mr. Lyons is meeting with favor among the operators is indicated in several replies that have been received to date to the Minister's letter asking for co-operation among the big pulp and paper concerns. Without exception the replies indicate a willingness to co-operate along the suggested line to the fullest extent economically possible.

NEW YORK MARKETS

New York, October 6 (Special Correspondence)—While actual figures are unobtainable, there is no question but that a new high record of newsprint consumption has been established in New York City this week. Probably never before have local newspapers printed such large issues as they have in the past five days. With the strike of pressmen ended Monday and with full pressroom crews back on the job Monday night and Tuesday morning, publishers proceeded to print all of the advertisements which accumulated during the two week's strike, and the size of the issues put out by both morning and afternoon dailies exceeded anything of the kind for a single week in the history of New York newspaperdom.

One of the morning papers printed an issue of 48 pages on two consecutive mornings, and the same paper had issues from 36 pages up on the other mornings of the week. An afternoon paper, which is reputed to be the largest circulated in the city, if not the country, printed an issue of 46 pages one day, and 42 pages another day. On the other days of the week this paper had issues of from 34 pages upward. All the other newspapers had correspondingly large issues, and a feature of the situation was that in spite of the tremendous size of the issues published nearly every paper in every issue announced that it was obliged to omit advertisements because of lack of space to carry all of the advertising offered. The printed issues of 48 pages announced in its Wednesday morning paper which on Wednesday and Thursday edition that 453 columns of advertisements were offered for publication of which it was able to print only 286 columns—the largest volume ever printed by this newspaper in a weekday edition. This same paper printed 286 columns of advertisements in its Thursday edition and omitted 42 columns.

This heavy consumption of newsprint should cheer the hearts of print paper manufacturers. For a time while the strike of New York pressmen was on there was some apprehension felt lest the loss in consumption in this big consuming centre might have a bad influence on the newspaper market. There is no longer any fear of this, however. Publishers in this city have very nearly made up any loss in consumption, and prospects are that the strike of pressmen will lead to a much larger use of newsprint in the future for the reason that department stores and other merchants were impressed with the importance and necessity of newspaper advertising during the strike the stores in this town being almost empty for the few days the newspapers were unable to carry display advertisements and there will consequently be a marked increase in display advertising in the daily press if this week is to be taken as a criterion

Otherwise the paper markets have displayed few material changes during the week. Demand for most kinds of paper is fairly active though it is spotty, the aggregate movement from mills into consuming channels being of comparatively large volume for this time of the year The market continues to expand and it has not yet reached its full breadth as consumers are still buying in a cautious manner and principally to cover actual and direct requirements.

One of the best known monthly fiction and fashion magazines has reduced its price from 15 to 10 cents a copy, and the current issue of this publication contains no less than 242 pages—somewhat of a record in the magazine field. This should be welcome news to book paper manufacturers as it indicates the trend of consumption of book paper. Book mills are reported speeding up under a decidedly heavier demand from publishers, and prices show a hardening tendency.

There is also a growing demand for fine papers and prices incline to stiffen. It is difficult to say what effect on the market the appointment of a friendly receiver for the American Writing Paper Company the largest fine paper producing organization in the States—is likely to be. Perhaps it will not affect the market at all, certainly there are no signs of any change thus far other than for some time past it has appeared as though mills independent of the big company have been securing the bulk of business in writing papers, matters within the big organization having been so unsettled that apparently it has not pushed its efforts to get business in a normal fashion.

Box boards have recorded a decline. Mills in the East have reduced quotations about $5 a ton to $55 f. o. b. New York for plain chip and $57.50 for news board, with some manufacturers accepting orders for news at the same price as chip. The reason for the drop in board is a local one. A strike has broken out in the New York paper box industry and demand for board from this centre consequently has diminished. Mills, and especially those situated near to this city, are in want of orders and therefore cut prices in the hope of stimulating buying. Whether they have succeeded in increasing the demand is doubtful since paper box manufacturers are seriously hampered by the strike and are purchasing board in a very limited way.

GROUND WOOD—Reports generally agree that water conditions in grinding districts have improved within the past few days. There have been some heavy rains and the streams feeding pulp mills have risen to some extent at least. However no apparent effect is noted in the ground wood market. Perhaps a little more pulp is available but prices hold firm and sellers are not pressing supplies onto the market; instead most of them are far behind in deliveries and need practically all the pulp being produced against commitments. Moreover, it is contended that there is small likelihood of domestic supplies increasing to any worthwhile extent for some time to come or for prices to recede as grinders have the bulk of their output for a month and longer sold ahead. Canadian producers continue to quote between $45 and $50 a ton f. o. b. grinding mills for ground wood, and they are receiving these prices without difficulty, while domestic ground

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CHEMICAL PULP—Proof is not lacking that prices of sulphite have steadied at the lower levels established during the decline of the market in September. There is less pressure to sell and both importers and domestic producers seem more determined to obtain the prices quoted than they were. Furthermore, it is quite apparent that the aggregate movement of sulphite is of good proportions. Papermakers are buying in a cautious manner but they nevertheless are absorbing sulphite pulp in comparatively good volume. On the other hand, kraft pulp continues easy in price and is sadly neglected by consumers. Board mills appear to be well supplied and are engaging in little purchasing of kraft, while demand from other sources is narrow. Foreign kraft is quoted at about 3 cents a pound ex dock New York, and some sales are reported off and on at slightly under this price. No. 1 imported unbleached sulphite is quoted at a range of 3 to 3.40 cents a pound on the dock at New York, depending on the brand and tonnage involved. Most sales are around 3.15 cents but extra strong sulphite is held by importers at 3.25 to 3.40 cents. Bleached sulphite is moving at from 4 to 4.25 cents a pound for No. 1 foreign ex dock New York, with sales of No. 2 grade reported down to 3.85 cents. Extra quality bleached, however, is quoted at 4.50 cents on the dock.

RAGS—There is a firm undertone in the papermaking rag market. Demand for most grades is holding up well although mills are buying against actual and immediate needs only. New cuttings tend higher, due in part to the high level of raw cotton and cotton goods and the resultant high prices prevailing on cotton cuttings at primary sources. New No. 1 white shirt cuttings are quoted at 12.50 to 13 cents a pound f. o. b. New York, washables at 5 cents, light silesias at 8 cents, blue overall cuttings at 8 cents, fancy shirt cuttings at 6 cents and unbleached muslins at 11.25 cents. Old white rags are firmly quoted and are moving freely. Thirds and blues are selling in good amounts at from 3 cents a pound upwards at dealer's shipping points for repacked blues, and 2.50 cents for miscellaneous packing. Roofing rags are more than holding their own in price; there is an upward trend in values, and felt mills seem sufficiently anxious for supplies to justify them paying slight advances. No. 1 roofing has sold this week at 1.60 cents a pound f. o. b. New York, and No. 2 stock at 1.40 cents. Cotton batting has shut up in price to around 6 cents a pound f. o. b. New York, due to the rise in raw cotton.

PAPER STOCK—Low grades of waste paper have eased off in price this week and the better qualities have been none too steady. Demand from mills has decreased to no little degree, which is believed to be a reflection of the slow operations of board mills as a result of the strike in the paper box trade. Folded newspapers have sold at 1.05 to 1.10 cents a pound f. o. b. New York, and No. 1 mixed paper at around 80 cents. a hundred pounds New York. Overissue newspapers have reacted to 1.30 to 1.35 cents a pound New York, container manilas to 1.05 cents, and common mixed paper to 45 cents a hundred pounds. Shavings are about steady at around 4.15 cents a pound f. o. b. New York for No. 1 hard white, and 3.20 cents for No. 1 soft white, while old magazines are one of the firmest items in the market and are quoted at 2 cents a pound f. o. b. this city.

OLD ROPE AND BAGGING—After a lengthy wait, dealers in old rope have witnessed a better demand for their article, and prices have stiffened. Sales of domestic No. 1 manila rope at 5.50 cents a pound f. o. b. New York, and in some cases at a trifle above this price, have been recorded, and foreign manila rope has sold up to 5.50 cents ex dock New York. Rope paper mills are reported much busier and this is borne out by a livelier call for the raw material. Old bagging is quiet and rather nominal in price. No. 1 scrap is quoted at 1.25 cents a pound New York, and roofing bagging at 90 cents a hundred pounds.

Industrial Items

GAS CONDITIONING FOR CO_2 RECORDERS

Soot, moisture and sulphur are the three natural enemies of the CO_2 recorder. New bulletin 116A of the Uehling Instrument Co. 473 Getty Ave. Paterson, N. J. illustrates three simple devices which, it is claimed, completely eliminate these three troublesome elements. In other words, they permanently prevent fouling and corrosion of the CO_2 equipment and the tubing which conveys the gas sample to the instrument continuously. These three devices are known as the "Pyro-Porus" filter, the gas drier and the gas purifier.

The "Pyro-Porus" filter is placed in the direct path of the hot flue gases, on the extreme end of the gas sampling lien. The actual filtering is accomplished by two highly porous refractory discs. These discs remain in continuous service for many months at a time without requiring replacement and without offering increased resistance to the gas flow.

The gas drier completely removes moisture from the gas, thus preventing pockets of water collecting at low points of the line, interfering with gas flow. By drying the gas, the life of the material used for absorbing the CO_2 is also considerably prolonged.

The purifier is a brand new development. It is claimed that it completely removes sulphuric acid fog which has heretofore been one of the most elusive and harmful impurities in flue gas. By eliminating water vapor and sulphuric acid, corrosion is impossible.

The bulletin also illustrates the small bore seamless drawn tubing used for the gas sampling line. This gives high velocity of gas flow resulting in quick response to the CO_2 recorder to changes in furnace conditions. This tubing is much easier to erect than pipe which was formerly employed for the purpose, and practically eliminates all the possibility of sampling line leakage which is a common failing of sampling lines constructed of pipe instead of tubing.

NEW SEWAGE SCREEN BOOK

THE LINK-BELT COMPANY has just issued a bulletin (No. 542) that will be of interest to every consulting and sanitary engineer. This bulletin describes and illustrates the Tark Screen, a new type of drum screen for the clarification of municipal and industrial sewage.

A copy of the illustrated bulletin describing the Tark Sewage Screen can be obtained by addressing the Chicago or Philadelphia office of the Link-Belt Company.

Canadian Pulp and Paper Manufacturers will be interested to know that the Taylor-Wharton Iron & Steel Company of High Bridge, New Jersey, manufacturers of "Tisco" one piece beater rolls, and plugs and liners for refining engines are offering new and efficient service through their Canadian Agents, Lamoreux-Kelly Limited, 285 Beaver Hall Hill, Montreal.

LINK-BELT ACQUIRES MEESE & GOTTFRIED CO.

Charles Piez, President of the Link Belt Company, Chicago, announces the purchase of the Meese & Gottfried Co., of San Francisco, Los Angeles, Seattle and Portland.

For the past ten years Link Belt Company has been distributing its products on the West Coast through its subsidiaries, the Link Belt Northwest Company, of Seattle, and the Link-Belt Pacific Company, of San Francisco. The improvement in distributing facilities effected by the consolidation, and the additional manufacturing facilities acquired, should give the rapidly-growing industries of the Pacific Coast highly economical and efficient service.

Meese & Gottfried Co., and its predecessors, have been manufacturers of power, transmission machinery and distributers of conveying and transmission machinery on the Coast for more than forty years, and were well and favorably known from the Canadian to the Mexican borders. It is the intention of the new owners, to add to the facilities, and enlarge present stocks, so that prompter service to its customers will be insured.

The new organization will be known as Link-Belt Meese & Gottfried Co., with head-quarters at San Francisco. The officials will be:

Charles Piez, Chairman of the Board,
B. A. Gayman, President,
Harold H. Clark, Vice-President and Sales Manager,
Leslie W. Shirley, Treasurer,
Richard W. Yerkes, Secretary.

TECHNICAL PAPERS RECENTLY ISSUED

Technical Association Papers, Series VI (1923)

In paper, 208 pages, $3

A Theoretical Discussion of the Reactions of Papermaking: Jessie E. Minor.
Anti-Friction Bearings: G. H. Spencer.
Bibliography of Papermaking for 1922: C. J. West and A. Papineau-Couture.
Chemistry of the Alkaline Wood Pulp Processes: S. D. Wells and others.
Chemistry of the Sulphite Process: R. N. Miller and W. H Swanson.
Dicussion of Papers.
Drying and Conditioning of Coated Paper: J. O. Ross.
Effect of Atmospheric Humidity on Paper Tests: P. L. Houston and H. S. Kirkwood.
Efficiency of Paper Drying: S. B. Jones and W. F. Goldsmith.
Evaporation of Spent Liquors: G. K. Spence.
Lake Color Manufacture: H. H. Holden.
Methods of Establishing Wage Rates and Determining Promotions: H. P. Carruth.
Papers on various subjects:
Paper testing: several papers.
Reports of committees.
Steam Economy in Pulp and Paper Mills: E. P. Gleason.
Steam Flowmeters on Sulphite Digesters: W. H. Kraske.
Study of Papermaking Materials: A. B. Green.
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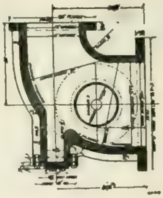

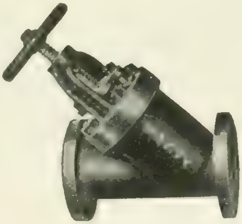

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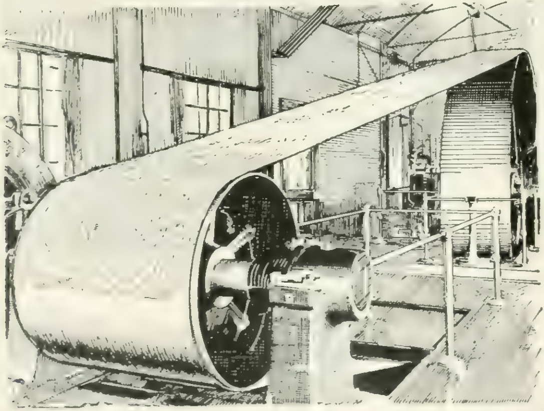

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EDITORIAL

WHERE ARE THE FARMERS?

During a recent motor trip of over 400 miles through Nova Scotia, we got the impression that the population contained quite a fair proportion of farmers, but apparently our observation was not accurate. It would appear from the evidence of some persons who have appeared before the pulpwood Commission that the so-called farmers of Nova Scotia are for a large part pulpwood operators It has been stated in that connection that an embargo on pulpwood would cause many small farmers and settlers to discontinue agricultural operations and move to the States. A wireless communication with our astral self assures us that there has never been an embargo on pulpwood in Nova Scotia, or elsewhere in Canada for that matter, and yet census figures show a steady decline in the agricultural activity of that Province. The fact of the matter is that when the wood is gone, the population goes also, and that is true of other Provinces as well as of Nova Scotia, and from the way we saw slash left in the woods it is a wonder there are any forests in that province. History shows that the keeping of raw material in a country and manufacturing it at home attracts population, and furnishes a home market for the farmer. The importance of the home market to the farmer is indicated by the fact that out of $1,800,000,000 worth of farm produce about a billion and a quarter dollars worth was consumed at home.

Sir John Willison has truly said that a country must manufacture its raw materials at home or its sons and daughters will follow them elsewhere. We have vacant farms scattered pretty well over eastern Canada which are mute testimony to the need of forest industries in Canada, not only to employ the farmer in his otherwise idle days, but also to furnish him with a market for his produce.

Mr. C. Howard Smith in addressing the Canadian Paper Trade Association this week, made a statement which emphasizes the need for further development of our own home manufactures, and particularly such as convert indigenous raw materials into the finished product. Our imports, which amount to about $1,000,000,000 a year are, for the most part, finished goods, coal and cotton being the principal exceptions. About 700,000 persons in Canada are engaged in manufacture, and this number would equal approximately two and a half million of population. These producers of manufactured goods turn out about $4,000,000,000 worth of products If one half of this billion dollars of imports were produced in Canada, and a large part of this could be produced in Canada, the industry thus established would support the equivalent of another city the size of Montreal, and the trade of these people would result in a great increase in business for the farmer, the merchant, the transportation agency and many other activities. It certainly seems to us that a further development of Canadian industry, especially in converting our raw material, would add to our population materially, rather than being a factor in its decrease.

THE RETURN OF THE APPRENTICE

The seriousness of the situation with regard to the supply of future artisans and executives in most industries is beginning to be thoroughly realized. The October number of the "Scientific American" contains an excellent editorial on this subject, particularly as it relates to the building trades in New York city. The Canadian Pulp & Paper Association has had a committee on apprenticeship for nearly two years, and there was recently formed an International Joint Committee on the subject as relating to the Pulp and Paper Industry. A number of forward-looking managers and superintendents have in operation a form of apprenticeship of one kind or another which seems to suit their particular needs, but apparently a good many concerns are going ahead on the hit-or-miss, happy-go-lucky plan that if they can't find a man in their own plant to handle a responsible position they can hire one away from somebody else. The former plan makes for a stable, enthusiastic organization, and the latter for a feeling of dissatisfaction and even disloyalty. Those who are seriously attempting to build up an organization with at least a nucleus of trained craftsmen in the art of pulp and paper making, consider a supplementary or basic education as an important and necessary factor to success.

The "Scientific American" refers to the need for an apprentice who is learning the *how* on the job, to learn the *why* in school. Large cities are now for the most part well provided with evening schools for just this situation, but there are a great many outlying districts where the support for such a school would be entirely out of the question, and yet where the need for apprenticeship training is just as important. The Pulp and Paper Industry is fortunate in having already built up the basis for a sound and thorough educational training in the **why** of pulp and paper making, which is now being successfully applied to the instruction on the principles of manufacturing processes, to men in the mills, while at the same time they are obtaining a familiarity with operations and materials in their daily work in the plant. Those who are interested in this subject, and every superintendent and manager should be interested in it, will want to read the following editorial from the "Scientific American" and the form of apprenticeship indenture that appears on another page.

> Although there is a growing doubt as to whether the good old days were quite as good as we have been taught to believe, there are undoubtedly some respects in which they surpassed the times in which we live. By way of instance, consider the day of the old apprenticeship system and the superb master workmen who grew out of it. Living in the home of his employer, bound to him for a period of years, the lad commenced with the simplest elements of his trade and was required to become thoroughly proficient in one detail of his training before another could be taken up. After a period of instruction frequently lasting for seven years, he graduated as a highly accomplished workman, expert in every branch of his trade. Of the ability of these workmen of mediaeval times we have abundant evidence in the superb masterpieces that have survived to the present day.
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> Labor saving machinery and our modern fondness for specialization, to say nothing of the tremendous rush of modern competition, have obliterated the indentured apprentice, and with him of course has gone the highly skilled and versatile artisan. Today the ranks of so-called skilled labor are largely filled up with labor which calls itself skilled, but is altogether unskilled; and as a direct consequence not only does the grade of work turned out bear no comparison with that of earlier days, but the unskilled and untrained mechanics tend greatly to diminish the output and add immeasurably to its cost.
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> Obviously the remedy lies in the resumption as far as may be, of the best features of the old apprenticeship system, shortening the period of training and adjusting the system to the conditions of our modern industry. Probably it is known to few outside the field involved, that a most earnest and successful effort is now being made in the building trades to do this very thing; and with a view to bringing this vital movement to the notice of the public Mr. Grosvenor Clarkson recently invited a large company of editors of this city to meet the representatives both of employers and of labor at a luncheon and learn from them what has been done.

The situation of today as outlined by Mr. Burt L. Fenner, president of the Apprenticeship Commission, is that in nearly all of the skilled trades the supply of skilled mechanics has declined until there are not more than 60 per cent as many available in many trades as there were ten years ago. Some skilled mechanics, it is true, come over from Europe, but for twenty-five years past the number has been practically negligible. Hence we must depend upon our own efforts, and educate our American boys for the skilled trades. The Commission has put in operation a system which aims to give the apprentice a thorough and well rounded course of training, the bulk of the instruction being given in the shop or on the job. It has been arranged that while the young man is learning "how" on the job he shall learn "why" by attending some form of training school. In this respect the Commission has met with enthusiastic support and co-operation of the Board of Education, well equipped classrooms and teachers have been supplied, courses of study have been outlined and have been adopted, and ample funds have been provided. It augurs well for the solution of this great problem that not only the employers but the labor organizations also are giving the new system their hearty support. Incidentally, Mr. Fenner drew attention to the fact that under the present method American boys are being brought up to better citizenship since the seeds of radicalism and discontent can find no congenial soil among the ranks of highly successful and skilled craftsmen.

Speaking for the chairman of the Board of Education Mr. Eugene Gibney drew attention to what he aptly called "the recent democratization of higher education" which makes possible for every citizen a high type of intellectual training. The humble parent would like to see his son in the professions, yet now that the trowel is earning more than the pen there is a mad rush to escape the white collar brigade. So the school was called on to develop a vocational training that should turn out in a month a bricklayer or a plumber. This has been regulated and the proper balance is now being found in giving the apprentice his intellectual equipment in the classrooms while he is acquiring experience and skill during his day's work on the job.

COBWEBS

At the hearing of the pulpwood Commission at Digby one witness caused amusement by repeating the remark of a neighbor who said, "If they put this 'lumbago' on, it is a bad disease, and we will never get over it."

Continuing Prosperity In the Paper Industry

The marked increase in paper production in August as shown by the monthly production statistics now being compiled by the American Paper and Pulp Association in co-operation with its affiliated organizations, is the best evidence that the conservative optimism felt by the entire paper industry is fully justified.

These figures, indicating in general a production well above the normal for the month were a reassuring evidence that the July drop in production, little below normal though it was, was merely the result of temporary conditions. The August production not only made up for the difference between the July normal and actual production, but was sufficiently high to establish a production total for July and August combined of more than the normal for those months. Eliminating the abnormally high production of these months in 1922 makes the 1923 summer showing even more favorable, as compared with a true summer normal.

It is difficult to state just how much of the increase is attributable to the effort of manufacturers to anticipate a normal increased fall business, or whether it is due to an increased demand now being felt at the mills. If we accept the assumption that stocks in merchants hands have been maintained at a low point, then we are reasonably correct in saying that the greater part of the increase was due to an actual increase in demand. That this is true is shown at least in part by the data on shipments of paper which increased 14 per cent. in August as compared with July.

Some of the more optimistic authorities predict that the period from now until the middle of 1924 will be the most nearly normal period of activity that the paper industry has experienced since the war. This attitude is not sponsored by the Association, but is mentioned as evidence of the optimism felt in some quarters. Certainly there seems to be no reason to anticipate anything less than reasonably good business and continuing prosperity for months to come.

In general, basic conditions seem to favor an upturn of all industries. Transportation problems are being met successfully, labor conditions are stable with increasing rather than decreasing wages, and foreign complications, if not favoring a better development of trade, are certainly not such as to warrant undue anxiety.

The transportation situation should not be ignored by the student of business conditions. The more rapid handling of freight by the railroads has a direct bearing upon business conditions. The fact that there is now a shorter time in transit for raw materials, and between the manufacturer of the finished product and the consumer, is a factor to be carefully weighed when considering stocks on hand either of raw materials in the mills, or of finished products in the hands of the distributors.

The general labor situation is satisfactory, with no surplus of workers, and at the same time enough of a labor supply to eliminate any immediate danger of such a labor shortage as would force existing high prices for manufactured goods to abnormally high levels.

Some students of fundamental economics are coming to the belief that too much stress has been laid upon the possible effects of Europe's political troubles upon American industry. It is their further contention that conditions abroad are such that America's high cost of production, due largely to the high standard of wages paid in this country, can hardly enable the American manufacturer to sell abroad at a profit. With the stabilizing of Europe there may be low cost production abroad, due to the readiness of European labor to work for wages that an American workman would not accept, and an amount of production that would not require America's manufactured goods. Such stabilization, however, should give a buying power for American agricultural products that would increase the buying power of the American farmer.

In any event it would appear that the future prosperity of American industry will be increasingly dependent chiefly on domestic, rather than foreign conditions.

It should be noted that for the first time since March prices of general commodities are showing an upturn. Special significance should be attached to the gain in relative value of agricultural products, and the resultant accentuated buying power of the middle west and south.

The general business situation is well summarized in the latest review by an important New York bank which says the resistance of business and finance to a succession of untoward circumstances such as the threatening aspects of the controversies between Italy and her Balkan neighbors, and the disastrous earthquake in Japan, attests the fundamental strength of the domestic situation.

Before referring to specific conditions in the paper industry it may be well to turn back to the Association statement of a year ago, when in its review of business conditions it outlined a situation warranting a belief in returning prosperity. That this was justified is shown by the production of paper in the first six months of the year. January production was larger than for any other month in the country's history May broke all records, except that of January.

After such a return of prosperity, and after such a volume of production only conditions approaching a boom could have prevented a seasonal decline in the summer months. That the July and August total, small though it was, as compared with the January-May figures, was above the sixty day normal is only additional evidence of the basically sound condition in the industry.

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[1] Resumé of conditions presented at the Fall Business Conference of the American Paper and Pulp Association, October 11, 1923.

There have been difficulties in the raw material situation, such as the shortage and consequent high prices for ground wood pulp, due to low water. Imports of foreign pulp have recently been larger than ever before recorded. The possibility of an embargo on the export of Canadian pulpwood has disturbed the wood market. No recession of prices due to possible lower costs of raw materials can be anticipated.

The situation in the various groups of the paper industry varies somewhat according to the grade. The fine paper demand is increasing, with stocks in the hands of printers and merchants below normal. In this field manufacturers anticipate very good business well into next year, if not through the year. Book papers are improving somewhat, with the temporary relief of the casein shortage, and shipments in August showed an increase of 18 per cent. above July. Wrapping papers have felt foreign competition severely, particularly in the offering of foreign papers of inferior quality to the American product. Paper board reflects an increased public buying of general commodities; this is seen also in the specialty papers used for food containers. The effect of the strike in the New York paper box factories is still problematical. Newsprint is keeping up a high production figure, and 1924 consumption may exceed even the high figure of 1923.

In general there seems to be no doubt of the approach of a period of good general business, and the paper manufacturer can not fail to be favorably affected. This is particularly the case since the conservatism of the paper industry in the past twelve months not only prevented increases of prices such as would have caused a buyers' strike in this basic industry, but relieved the industry as a whole from the after effects of an unwarranted price inflation.

The paper industry, therefore, is approaching the fall months with confidence, anticipating a continuing prosperity, and with no handicaps to overcome in getting away to a good start after the normal seasonal dullness of the summer.

SULPHITE PULP OUSTS SILKWORM

Man's ingenuity in adapting natural resources for the utilizing by the human race was realistically demonstrated at Tuesday's luncheon of the Paper Club in the Mount Royal Hotel, when T. J. Stevenson, president of the Riordon Sales Corporation, Limited, gave a talk on "Recent Developments in the Use of Wood Fibre for the Manufacture of Fabrics." Mr. Stevenson submitted samples of bleached sulphite, and articles which had been made of this material, ranging from the artificial silk yarn, trimmings, and ornamental designs, to artificial silk sheeting prepared for garments which, it was stated could not be distinguished by the man in the street from real silk. The best of artificial silk could be produced at one-third the cost of the real material.

MR. T. J. STEVENSON

Mr. Stevenson quoted figures to show that both in Europe and in the United States the production of artificial silk has constantly increased since pre-war days, generally by 200 per cent. European countries, particularly France and Belgium, where the plants had been destroyed, had happily recovered their production. In this connection Mr Stevenson remarked that it was proposed to start in Canada a large factory, backed by English capital, for the production of artificial silk from bleached sulphite. This would be adding a new industry so far as Canada was concerned, and, in view of the fact that such an industry employed a large number of persons, it would readily be seen that the addition to Canadian industry was of importance. This country produced large quantities of high class pulp suitable for conversion into artificial silk.

Mr. Stevenson sketched the development of this industry within the last 20 years, describing in brief the four processes under which the manufacture was carried out. The industry required large capital and technical attainments. From very small beginnings in the manufacture of a limited range of articles, the artificial silk manufacture approached both the appearance and other qualities of real silk. It was also being used as a mixture in garment materials. As early as the 18 century attempts were made to substitute a material for raw silk.

F. G. Robinson, sales manager of the Riordon Sales Corporation, Ltd. supplemented the remarks along this line.

J. N. Stephenson, editor of the Pulp and Paper Magazine, who is in charge of the Pulp and Paper exhibit in the Canadian section of the British Empire Exhibition to be held in London next year, said that plans were being carried out to have the pulp and paper exhibit one of the best of the Canadian section.

At the ten minute discussion on "New Methods of Promoting the Use of Paper," strong emphasis was laid on the desirability of creating more business, and discovering new outlets rather than wholly following old methods.

On the occasion of his departure for South Africa, F. H. Devenish, Montreal representative of the Pulp and Paper Magazine, was presented with a testimonial at the club.

A. L. Dawe, president, was in the chair.

Safety in The Paper Industry

The subject of "Safety in the Paper Industry" is broad enough to allow even the secretary of a trade association and a forester to discuss factors of safety in industry.

The paper industry has been very responsive to the excellent work of the Paper and Pulp Section of the National Safety Council, and is deeply appreciative of the work of this Section. Safety in the paper mills, as you understand it, is not yet sold to all of the pulp and paper mills, and it is not to be expected that the sale will take place until educational work is done that will convince the mills of the desirability and the necessity of guarding efficiently the safety of the workers.

A New York organization recently made a general study of the interest and support given by groups of men and women to various organizations, religious, fraternal and commercial. Assume that we have five hundred pulp and paper mills, how many of these mills will take active interest in the application of safety methods; how many will be only passively interested and how many will oppose any action? The result of investigation here in New York determined that, generally speaking, one third of any group of men or women making up an organization will be active in the work of the organization. The second third will be active if they are crowded by the first third. The last third are members of the organization for reasons often not connected directly with the purpose of the organization or because they are afraid to stay out of the organization. This last third will be resistant to the aggressive work of the organization, and in a way, will always have to be carried, more or less, in any forward movement. It would be interesting to see how this "rule of proportional support" applies in the acceptance of safety practices in pulp and paper mills.

Any trade association of value to an industry is concerned constantly with the protection, promotion and perpetuation of that industry. In serving an industry along these lines of promotion and perpetuation particularly, an association must work always with certain factors of assured safety, such as safety in supply of raw materials, safety in the assurance of a market and assurance of an adequate supply of the right kind of labor.

Safety of Life and Limb of Vital Matter in an Industry

This section is concerned in all of its activities with promotion of methods which will assure safety of life and limb in the mills. The Trade Journals which are serving the industry so well repeatedly print articles by men who understand the application of safety methods in the mills, and these articles illustrate devices which will insure safety to employees. It would be quite out of place for me, as a forester, to attempt to discuss with you the details of safety appliances and methods with which you have great familiarity.

The National Safety Council, through very effective educational efforts which have been projected through all the Sections, has now come to be recognized as the great advocate of safety, not only in the industries but in the daily life of the people. One has but to go through the General Program of this meeting to appreciate the wide ramifications of the Council's work. It is very largely educational, though the results now being obtained as a result of education are being felt in all the industries and are benefiting employer and employee alike.

There must be aggressive educational effort made in assuring safety to the industries, not only in the way of life and limb of the employee, but in the matter of raw materials, assured market, and a constant supply of labor of the right kind. The fundamental safety which every industry is seeking in the way of being able to so operate that there may come reasonable profit from funds invested and from service given, might well include another feature which is a factor difficult to measure and difficult to inject into the relations of men. This is the securing of harmonious relations between the employer and the employee, aggressive co-operation between the great industries of the country with their many common interests, and satisfactory and successful co-operation between the industries and the various phases of government with which they come into contact, — municipal, state and federal.

Assured Supply of Raw Material a Fundamental Element in Safety

No industry has been developed in this country, with all that that means in the way of business initiative, capital and market, without there first being an assured supply of reasonably cheap raw material. However, this country has been so tremendously blessed with natural resources from which it secures raw materials for its industries, that in some cases, great industries have been developed without reasonable thought as to the availability and permanency of raw materials.

The paper industry is a good example of a great industry for which there has been such easily available raw materials that there has been little thought for future permanent supply of raw materials. The forests from which pulpwood comes have seemed so inexhaustible, and pulp mills have had so little difficulty in getting the wood desired, that many mills have been developed as converting mills upon the assumption that there would always be an assured supply of necessary pulp. Other industries have been built up with the same indifference as to the essential raw material upon which the future of the industry rests.

For much too long a time the converting paper mill, not owning forest and not producing pulp, has gone on with investment in the mill and with development of market, feeling that somehow or another pulp reason-

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[1] Paper by Hugh P. Baker, American Paper and Pulp Association, read before the Paper and Pulp Section, National Safety Congress, Buffalo, N. Y.

able enough in cost to warrant development would always be available. There has been too little consideration of the fact that our forests are being cut nearly four times as fast as they are growing, and that we are rapidly nearing the end of the virgin supply.

The difficulties which the paper industry faced during the War in securing necessary pulpwood, in many cases gave the converting mills their first thought that interest must be taken in the forest and in the practice of forestry. The recent action of the Canadian Parliament, in passing an Act which empowers the Canadian Government to place an embargo upon all wood from Canadian lands, comes as a very strong second reminder that the paper industry is a wood-using industry, founded upon the wood-pile. If the wood pile cannot be constantly restocked, and that at a reasonable cost, the very permanency of the paper industry is threatened.

Can any one of you think of an American industry that does not draw for its raw products upon some one of our natural resources? We are at the end of free land for the settlers in the West. We are appreciating our limitations as to future supply of oil and are reaching beyond our boundaries for supplies that will take care of us in the future. We are going farther afield and deeper for minerals. All of this is developing gradually the consciousness on the part of the people, that as a nation we must practice conservation, and, if we are to continue with our industries, we must not only practice conservation but we must increase the supply of raw materials upon which we are dependent. Can there be any question that assured supply of raw material is a fundamental element in safety?

Satisfactory Market a Factor in the Safety of an Industry

Why be concerned with a supply of raw materials, with available and satisfactory labor, and why concern ourselves with the safety of the laboring man, if the industry which we serve cannot be assured of a reasonably good market for its products?

The desire for greater production and more business has, in many cases, brought about over-capacity; and to take care of this over-capacity we have sought new uses for our products, or we have concerned ourselves with the development of foreign markets. We are forbidden by law to agree to restrict production or to divide territories in which we market our goods, and any reference in a group of manufacturers to the question of price is "the worst of offences". It seems very reasonable to assume that with increasing competition for the markets of the world, the time will come when anti-trust legislation must be changed so that the public good will be considered and certain agreements will be allowed as to restriction of production, division of territories, etc.

The industry which it is my good fortune to serve has seemed very loath to consider any aggressive or united action in promoting foreign markets for paper, yet there appears to be a decided tendency toward over-capacity in many different branches of the industry. The result of this must be an ever keener fight, with the survival of the fittest: meaning, of course, discouragement and loss to those who go down in the struggle. The paper industry could well afford to spend considerable sums of money in the next few years in developing foreign markets.

We are so blessed with natural resources, particularly with the resources upon which the paper industry calls, that even with higher labor costs it is difficult to understand why the great South American market, for instance, should be turned over without a struggle to Canadian and European paper manufacturers. All concerned in any way with making this fundamental industry of ours permanent in the country must consider this question of a satisfactory market as a fundamental factor of safety.

Assured Supply of the Right Kind of Labor a Factor of Safety

Of the elements making up an industry, that of a satisfactory supply of labor is the one to which the average manufacturer gives the greatest thought over a given period of years. As in the case of raw materials, labor has been abundant and of fairly satisfactory character in the past in this country.

For years we have been able to attract from European countries people similar to the original stock in this country and people easily absorbed into our industries. With the slowing down of immigration from the northern countries of Europe, and the great need for common labor, there has come into this country in the last twenty years many thousands of men and women from the eastern and the southern countries of Europe. These people, of a different blood, and brought up under different cultural conditions, have been much more difficult of amalgamation than the peoples from central and northeastern Europe. A certain slow amalgamation of these peoples is taking place, but there is greater need for educational activity with them. This educational need means that there is opportunity for the industries of the country to unite in efforts to make these peoples of southern European blood fit more satisfactorily into our industries.

In many cases pulp and paper mills are located in isolated sections, and have been developed with labor from the local population. Gradually, however, as other industries have developed about the mills and as the Southern Europeans have crowded into almost every section of the country, our people are faced with the problem of dealing with two radically different groups. It is far from safe to consider the future of the pulp and paper industry without considering the necessity of using the eastern and southern European, either in groups or in mixture with the older and native labor.

One of the difficult problems which has arisen in employing labor from eastern and southern Europe has been the apparent readiness of these groups to be led by agitators who are often unprincipled or who have radical leanings and connections. As a matter of safety, the industries could well consider seriously this question of just how labor is organized and led. In numerous cases, where radical leaders have been forced out, the problem of satisfactory contact with labor has been a very different question from what it was with the radical leader in control.

Labor is very much in the saddle in some of the foreign countries, and it behooves the industries of this country to study the results of labor's influence, in politics in foreign countries that our industries may at least be prepared for even more difficult relations with labor than now exist

After all, labor is a vital element in all of our industrial activities. Antagonisms must be broken down and efforts must be made to bring about harmonious relations. The human factor can never be handled or its problems solved, in the way in which we solve problems of raw material. Unfortunately there are still individual plants in various industries where labor is considered and handled as it was under the very different conditions existing in the Seventies and Eighties in this country and abroad. Education and understanding is doubtless the solution of the problem of the relationship between the employer and the employee, as it must be the solution of the problem of raw material and of market.

Harmonious Relations Necessary to Bring About Complete Safety in the Paper Industry

The necessity for harmonious relations, as between employer and employee, has been pointed out in the discussion of labor as a factor of safety. Harmonious relations have been achieved and can be achieved, and, in the long run, will be fundamental to success in industry.

In every industry there are essential groups which have often unfortunately been antagonistic groups. In the paper industry we have one sector of the cycle of activity occupied by the producer of pulp, another by the paper manufacturer, a third by the merchant and a fourth by the ultimate consumer. Too often in the past the paper manufacturer has focussed his entire attention upon production, failing to appreciate the necessity for harmonious co-operation with the other elements of the circle and, as a result, has often been forced to dispose of his product at much too small a profit. There are still too many manufacturers who consider that the manufacturer and the merchant are in direct conflict with each other; again, there are many paper manufacturers who feel that the operator who produced wood and pulp is in another sphere, and not necessarily vital to his welfare, providing he can secure the pulp at a figure that will let him make a profit on his paper.

The difficult economic conditions ahead, facing as we appear to be a period of declining prices, and with a promise of tremendous competition from a rejuvenated Europe, makes it very essential, if not a necessity, that the various sectors of the circle of the paper industry should come to feel that they are a part of one big industry, and not separated and antagonistic parts. It has seemed difficult for the various elements in the paper industry to appreciate that when the paper manufacturer is having poor business, business is poor for the manufacturer of pulp, the manufacturer of machinery and supplies and the merchant. There are common problems and common interests that, in the days ahead, must draw all of the groups together to work as a completed circle and to the benefit of all.

For too long a time there has been indifference, and often antagonism, among the great industries of the country. Industry has much to learn in the way of organization from labor and agriculture. Not that industry should be organized as labor and agriculture are organized today. Only as the business of the country comes together effectively to insure the protection and perpetuation of natural resources to meet the onslaught of those who would increase government regulation and control and to meet competition in foreign markets, will there come results necessary for the successful carrying on of business and industry.

A. P. COSTIGANE, Safety Engineer, Toronto. The Chief Exponent of Safety in the Canadian Pulp and Paper Industry.

Time and again in the past few years there have been almost tragic examples of industries, and of individuals within industries, waiting until they were on the defensive or until they were under attack by the Government, before they were brought to an appreciation of the necessity for the interest and support of the public for their industries or before they were ready to meet investigation and attack to which all industry seems susceptible. Organized effort on the part of the industry will go far toward preventing injurious and confiscatory legislation, and very far toward winning the support of the public in solving of problems confronting industry.

The public which, after all, controls the country through voting power is reading and thinking as never before, and exercising greater independence as citizens and as voters. As a rule, and in the long run, the American people are fair-minded. If industry will take its problems to the public in a frank, sensible way, through organized education and publicity, a long step will be taken toward preventing radical and destructive legislation.

It has been expensive practice for some of the industries to take the attitude in the past that it's none of the public's business as to how the industries are operated. In many cases this attitude has been continued until dangerous legislation is introduced and then there is a rush to the state capitals or Washington, with the expenditure of large sums, to prevent such legislation. Aggressive co-operation must be practiced by the industries to keep pace with the same sort of aggressive co-operation on the part of the labor interests of the country and the agricultural interests. We must not have industrial blocs or unions, but for safety's sake we should have a common sense working together of all of the great industries for the solution of common problems.

The Schools of Espanola

It is doubtful whether there is anything in the province of Ontario that will surpass in excellence of equipment and building the schoolhouses at Espanola, Ontario or in enthusiastic support of educational work the atitude of the Spanish River Pulp & Paper Mills limited. The editor recently visited Espanola, and had the pleasure of seeing the schools. The photographs shown on this page are but recently received and represent educational buildings that would well inspire the pride of any public spirited citizen. Espanola is not only fortunate in having such excellent buildings and spacious school grounds, but also in having a fine corps of teachers and an excellent public spirit in the town supporting educational work.

A few particulars regarding the schools and school work at Espanola will be of interest to our readers.

The PUBLIC AND CONTINUATION SCHOOL building comprises 7 public school rooms, one industrial and technical night class room and one room available for Domestic science.

Espanola Public School built 1919 extended 1922

The building over all is 94 feet long by 88 feet wide, two storeys high with ceilings of twelve feet. The construction is concrete foundation with solid brick partitions throughout the basement, comprising the fire proof boiler room, playrooms and toilet rooms for boys and girls, fresh air rooms and supply rooms.

The heating system is low pressure steam, using the Dunham system with Kewanee boiler. The ventilating and sanitary systems are of modern and approved types.

The interior finish of the building is Georgia pine, oiled and varnished, with walls burlapped up from the baseboard approximately 4 feet and painted dark green , the whole making a harmonizing combination of color, restful to the eye and yet cheery in appearance.

The outside walls are of brown range rug brick. The dimensions of the school grounds are 782 feet by 274 feet or approximately 2.12 acres.

The number of children on the register is 270; number of teachers, Public School 7; Continuation School 2.

The class rooms are equipped with approved furniture up-to-date teaching apparatus and classed as A-1 by the Department Inspector.

Thirty maple trees were this year planted around the grounds as the first step to making the Espanola Public School a landscape of beauty for the District as well as a comfort and credit to the local community. It is intended in the near future to fence the school grounds with suitable fencing approved for such purposes.

The SEPARATE SCHOOL is known as the Sacred Heart School, and comprises eleven rooms. The size of the building is 77 by 77 feet with an additional wing built in 1922 of 34 x 40 feet, the total floor space being 7,500 square feet. The construction consists of cement foundation, cement floors solid brick partitions and fire proof boiler room. The superstructure consists of solid brick walls, pressed brick exterior, hard wood floors, plastered walls and ceiling Georgia pine trim. Heating is provided for by Dunham vacuum system, gravity feed low pressure boiler; the ventilation is direct forced ventilation having a complete change of air in each class room every two minutes, if necessary. Thereis accommodation for 12 teachers and 445 pupils, eighty-five per cent of whom are French-Canadians.

Espanola Separate School

The grounds are 519 feet by 274 feet, or 3.26 acres.

The school is classed A-1by the Department of Education. The educational facilities of Espanola are such that the schools are the pride of the town and district and are second to none in the province.

The Bilingual Inspector on his visit signified his intention of making the Espanola School a model for all other schools of the province.

WHAT FARADAY TOLD GLADSTONE

It was about electricity — in its earliest days.

"But after all," protested Gladstone, "What use is it?"

"Sir," said Faraday, "there is every probability that you will soon be able to tax it."

"Ah! Ah!" said Gladstone.

So to the practical man, who in these days of urgent economy must scrutinize closely every proposed expenditure of Government, the real economy of a wise expenditure on Scientific Research in connection with Canadian agriculture and industry of all kinds, is indicated by the stories of what research has accomplished.

Every greatness there has been in any thought of mine, whatever I have done in life, has been due to the fact that when I was a child my mother daily read with me a part of the Bible, and daily made me learn a part of it by heart. -*Ruskin.*

Canada's New Patent Act

An Explanation of the Important Changes

By H. MACDONALD, Legal Secretary, Canadian Manufacturers' Association, in "Industrial Canada."

The new Patent Act enacted in the last session of the Dominion Parliament, and which by proclamation of the Governor in Council came into force on Sept. 1st, 1923, contains many provisions radically different from those in the old Act. The principal changes have to do with the conditions an applicant must fulfil in order to obtain a patent, and with which he must comply in order to maintain his patent in force. The prohibition against importation of the patented invention after one year from the date of the patent is removed and new manufacturing and licensing provisions introduced.

The former Patent Act, in its main provisions, has remained substantially unchanged since 1869, when it was drafted, with the United States Act of 1836 as a model. Since that date, the only material change that has been made has been the introduction in 1903 of the compulsory license system as a substitute for workings with respect to certain classes of inventions.

The International Convention

There has been a growing sentiment that the Canadian Patent Act should be amended in order to permit Canada to become a member and so secure the advantages of the International Convention for the Protection of Industrial Property (signed at Paris, March 30th, 1883; revised at Washington, June 2nd, 1911). The principal advantage to be obtained by the Convention is that contained in Article 4 thereof, which provides: "Any person who has duly applied for a patent, industrial design or model, or trade mark in one of the contracting states shall enjoy, as regards registration in the other states and reserving the rights of third parties, a right of priority during the periods hereafter stated."

The period stated with respect to patents is one year. Canada under its former Act, gave the same protection as the Convention did to all foreign applicants, but received nothing in return. The principal bar to Canada hitherto becoming a member of the Convention has been that contained in Section 38 of the former Patent Act, which prohibited importation after one year, this being contrary to Article 5 of the Convention.

The revision of the working requirements contained in the new Act will enable Canada to become a member of the Convention, with the result that inventions by Canadian inventors will be protected during a period of one year in all countries of the International Union. These countries include, at the present time, Austria, Belgium, Brazil, Cuba, Denmark, Dominica, France, Germany, Great Britain (with Australia, Ceylon, New Zealand, Trinidad, and Tobago), Holland, Hungary, Italy, Japan, Mexico, Norway, Portugal, Serbia, Spain, Sweden, Switzerland, Tunis, and the United States.

Revised Conditions

The conditions imposed on an applicant for a patent have been revised in the new Act as follows:

"7 (1) Any person who has invented any new and useful art, process, machine, manufacture or composition of matter, or any new and useful improvements thereof, not known or used by others before his invention thereof and not patented or described in any printed publication in this or any foreign country more than two years prior to his application and not i public use or on sale in this country for more than tw years prior to his application may, on a petition t that effect, presented to the Commissioner, and on compliance with the other requirements of this Act, obtain a patent granting to such person an exclusiv property in such invention.

"(2) No patent shall issue for an invention which has an illicit object in view, or for any mere scientific principle or abstract theorem."

The principal changes are (a) with respect to prior knowledge in other countries than Canada; (b) with regard to prior publication; (c) with regard to public use or sale prior to application.

Former Act Rigorous

Under the former Act the requirements which an applicant for a patent had to fulfil with regard to prior knowledge were more rigorous than any other country in the world. To be entitled to a patent in Canada, under the former law, the applicant had to be the first inventor throughout the world, and not merely in Canada. This made a Canadian patent liable to attack by proving that, prior to the date of the alleged invention, it was, as a matter of fact, known in some way to some other person in some other part of the world. The phraseology of the former Act was particularly comprehensive in requiring that the invention should not be "known or used by any other person before his invention thereof." The new Act substitutes "not known or used by others in Canada before the invention thereof." By the new Act, not only is knowledge restricted to Canada, but it is required to be knowledge "by others," not "by any other person." This phraseology has been construed in the United States courts to exclude secret knowledge, such as an unpublished drawing or prior model.

The new Act makes publication for more than two years in Canada or any foreign country a bar to the application for a patent.

The new Act also introduces a prohibition against public use or sale in Canada for more than two years, and makes no reference to whether or not the public use or sale was with the consent or allowance of the inventor or not.

Section 8 of the new Act extends the time within which application may be made on an invention for which a foreign patent has been taken out until two years from the date of application of the foreign patent, as compared with one year from the date of issue in the former Act. The corresponding section in the United States permits application within one year from the date of application in a foreign country, for which protection is afforded by the International Convention.

Explanations of Sections

Section 16 contains new law and follows exactly the terms of Section 11 of the British Patents and Designs Act, 1919. It provides, in brief, that in the case of patents on chemical processes no claims shall be made for the substance itself except when prepared by the special process described, and further, that in the case of inventions maintained for the preparation or production of foods or medicines, the Commissioner may grant a license to any person applying for the same, upon such terms and conditions as may be settled by him, having regard to the desirability of making the food or medicine available to the public at the lowest price consistent with giving to the inventor due reward for the research leading to the invention. The enactment of this law in Great Britain is too recent to enable any opinion to be formed as to its effect.

Section 24 introduces new law with regard to invention made by persons in public service, and is a restriction upon the rights of such persons.

Section 27 of the Act, with respect to the re-issue of patents, has been amended, but limits the time within which application for re-issue should be made to four years from the date of the patent.

Section 40 sets out the specific conditions under which any patent, except those governed by Section 24, is subject, respecting the manufacture of the patented article, for the reasonable requirements of the public, all questions regarding which may be determined by the commissioner or on reference to the Exchequer Court.

The right of the Government of Canada with regard reads: "The Government of Canada may, at any time, use any patented invention, paying to the patentee such sum as the Commissioner reports to be a reasonable compensation for the use thereof, and any decision of the Commissioner under this section shall be subject to appeal to the Exchequer Court.

Summed up briefly, it may be said that the provisions of the new Act are more liberal in the consideration extended to inventors. Amongst the most important departures from the old legislation are extension of the time limit set for the manufacture of the patented device; provision for one partner in an invention to secure a patent upon it under certain conditions; making registration of patent attorneys obligatory, and reducing the amount of fees, and the danger of allowing the patent to lapse through failure to pay a second fee instalment. Inventors and manufacturers will thus be given a better opportunity to develop inventions to a commercial stage than under the rigid manufacturing and importation requirements of the old Act, and in the end Canadian industries will be benefited more by the resulting commercial development than by any advantages formerly obtained from forfeiture.

LUMBER FROM N. B.

There is about a million feet of lumber to be shipped from Welsford, N. B., this fall, and it is expected that a portable saw mill will be operated at Blagdon this winter.

CORRESPONDENCE

Editor, Pulp and Paper Magazine.

Sir,—So much valuable space has already been given up by the press of Canada to the cause of forest conservation that I shall refrain from attempting to answer the columns of specious and factitious statements that have recently appeared in some newspapers in opposition to the proposed embargo on the exportation of unmanufactured wood. These so-called arguments have been answered time and again in the press. If their authors have not already been convinced there is nothing that anyone can say at this time that will convince them. I will, however, ask your indulgence to put two or three questions that will perhaps do more to make the matter clearer to the people than any long columns of statistics could do.

In one of my recent letters which has been printed in practically every leading newspaper in Canada I asked this question: "Is there a man or women in the whole Dominion of Canada who will say that it would not be better for the country to have our pulpwood manufactured at home, thereby leaving $50 in the country for every cord of wood cut, instead of having it exported and leaving only the $8 to $15 per cord which is now being obtained?"

Despite the very wide publicity given to this question no one has yet undertaken to answer it.

I will now further ask, "Is there a man or women in Canada who is satisfied with living and business conditions as they now exist and what is being done by the Provincial or Dominion authorities to bring about any improvement?"

The next question naturally suggested is, "How can such a change be brought about?" My reply is that such an improvement can be brought about by increasing the number of our industries thereby giving employment to a larger population and creating better markets for agricultural products. In building up manufacturing industries we build up the agricultural industry as well, which is of greater importance now than ever since the United States has placed an embargo on our farm products, cattle, fish, etc.

The next question is "How can we secure these additional industries?" The answer to this is that they can be secured in no easier, quicker or less expensive way than by the very simple process of the government at Ottawa passing an Order-in-Council to prohibit the export of unmanufactured wood from Canada. I personally know of at least three pulp mills that would be built in one of our provinces if such an embargo was put in effect and other pulpwood provinces would doubtless fare as well. This would lead not only to still other pulp mills being built but also to the establishment of additional industries which would necessarily follow in their wake.

Competition for the purchase of pulpwood under these circumstances would become so keen among the home mills that such wood would advance in value and not decrease as some of the American interests are trying to make the farmers believe. If there is a farmer in Canada who really believes that such an embargo would not add to the value and demand for his timber land and his wood then that man is lacking in the acumen that should characterize the average Canadian farmer.— F. J. D. Barnjum.

How Big Should A Business Be?

In "Collier's The National Weekly."

You may have noticed that the leading theatres of New York have agreed to open a central ticket office. Possibly you said "Now we shall not have to pay a premium every time we want to buy a ticket" — and you praised the managers. For a long time comparatively few New Yorkers have bought their theatre tickets at the box office. The agencies have handled the bulk of the tickets.

If they thought a show was good, they bought ahead and ensured a run; if they decided the show was not a good one, they would not stock up and the show would have to close regardless of its merit. Theatre tickets are, presumably, permits to witness a dramatic effort, but in the hands of the agencies they are merchandise and it is as merchandise that I am talking about them, for this is not an article on the theatre.

The managers saw the control of their investments passing out of their hands, just as the control of a business which sells only to one customer soon passes into the actual if not the titular control of the customer. The public will no longer visit theatres to buy tickets. Therefore the managers in their extremity organized a central office. But without knowing it they have done much more than found a convenience. They have demonstrated a new business principle which is going to have a profound effect upon American institutions. They have demonstrated that the keenest competitors can combine without losing anything of value — and still be competitors. They have done something which the economists used to say was impossible — which nine out of ten business men would say was impossible. They have shown to us that some of our cherised assumptions are all wrong. They have done more to the Sherman Law than several million dollars' worth of lawyers have been able to do. Perhaps manufacturers previously joined to market highly competitive products — but I have never before heard of it.

These managers have created a sales monopoly. If the theatres were shoe factories and their owners had conspired to sell their goods together in one central shop, the Government would have started a suit under the Sherman Law; but there is no hint of such action here. No one has suggested that the tired business man on his way to the Follies will be told to take Shakespeare or nothing, or, if he wants two seats, that he will have to take half a dozen.

As a matter of fact, we, the people, have gone a long way toward readjusting our economic opinions to the facts. We realize vaguely that there can be merit in combination. Our laws and our lawmakers have not caught up with us. Both are a good twenty years behind the times. Both are still portentously saying; "This corporation is so big as to be a monopoly," or "This combination eliminates competition." They think that they are stating moral offences. Are they? How much competition is good for us? Do we get better service with competition or without it? Is a monopoly a benefit or a curse? Undoubtedly anything in restraint of trade is a curse, but does monopoly restrain trade as much as does competition?

Antics of the Law

These are questions which we have decided for ourselves in many cases. We wonder whether it is worth while for the Government to hire quite so many ardent young lawyers and investigators to make reputations nagging corporations that seem to employ many men at good wages and to sell at fair prices. We wonder why the farmers are praised for doing what it is a crime for business men to do. We are glad to see the farmers combining to market their potatoes; we know that we get better fruit out of California now that the growers are together than we did when each was on his own, and we wonder why more fruit growers do not combine. But if the steel companies want to join, an investigation is called for; a combination of packers is made in the face of certain prosecution. The heads of every large corporation live in constant fear of prosecution. I know one company that could put in several improvements which would considerably lower the cost prices to the public, but their counsel advise them that these changes might lay them open to an action under the Sherman Law. They must go on wasting just because the law says that waste must be.

These are not merely questions for the big fellows You and I as average citizens have more vital interests in the regulation of industry than have the corporation presidents. The laws were presumably passed for our benefit. If they now harm us, then we ought to know it and act accordingly.

Let us have a look at the facts. Take, first, this matter of monopoly. If a corporation controls, say, less than half of the business in its line, it is, technically, not a monopoly. It is a good corporation in the eyes of the law. But what actually does this mean to us? Cheaper prices? Not at all. Any corporation which controls 40 per cent of the production in its field has the remainder of the field at its mercy.

The United States Steel Corporation can sell steel at a profit for several dollars a ton less than the next best independent. It could put every independent out of business almost overnight if it chose. If it did cut its prices, and the independents went out of business, then a prosecution would follow. So it must price at a figure which the less efficient companies can make. It is forced sometimes to take higher profits than the best business demands — just in order to keep the other fellows in existence.

But these are only high profits per ton; if one company could make all the steel in this country, the price to the public could be lowered, the wages raised, and the dividends, if not increased, at least made more stable. The Government policy actually forces high prices and therefore decreases consumption and, of course, production. And since wages must be paid out of production, this in turn decreases wages.

This is what the people are sensing. This is what the law does not know, for neither the law nor the lawyers grasp the economics of production. The people have seen combinations attacked on the ground that they increase prices, but they have never seen a price lowered as the result of a successful suit by the Governments. The Standard Oil Company was dissolved by judicial decree, and a great hubbub was raised about the victory. But the constituent companies have made more money than the old united company could possibly make, because now the price is fixed by law on the cost of the high-cost producer. The low cost producers can revel in profit.

What Becomes of Little Fellows?

The public has long become hopelessly sceptical of the law's stepping in to prevent extortion. The law just prevents something — and stops. Our "trust busters" never performed any constructive services. They simply took one end of the law game. It is the business of the Governent and its lawyers to take the laws handed out, and enforce them. It required a strong man like Colonel Roosevelt to hold that a plain law on the books should not always be enforced.

In every industry which has one dominating company and a host of smaller companies, the small fry exist by virtue of the Sherman Law. Such an existence is perilous, and that is the reason for many of the mergers which have been recently going on. The Bethlehem Steel Company cannot compete with United States Steel unless the latter so fixes its prices as to permit competition; the Bethlehem people have been afraid that in a depression the big company would so cut prices to get business that they and all the others would be shut out. Therefore they took in some other companies, and the Attorney-General sanely held that they were within the law and that the combination, far from being in restraint of trade, would further it.

In the match business one big company has long controlled; now fifteen smaller companies have joined so that they can have a look at business in hard times. One big copper company joined with the largest copper manufacturer so that it could go straight to the consumer for business and, by cutting out one profit, go down to a lower price level and so stimulate copper consumption.

It is inevitable that one or two big corporations should control an industry. The place for the small fellow is not in the production of staples, but in the specialties which demand craftsmanship and in which prices do not so much count.

The Sherman Law had its reason. It was passed in 1890, when big business was all and more than its baiters think it is to-day. Big business was stupid — just as most business is to-day. The near dollar was the only dollar anyone cared about. Even Andrew Carnegie, who had the long view in so many directions, and knew that an executive must have a stake in the business as well as a salary, could not bring himself to let his partners actually take their earnings out of the business; "the Carnegie millionaires" became so by reason of a suit brought by H. C. Frick.

It was generally held that the way to get rid of competitors was to buy them out — or, failing in that, to start a price war and put them out. That was the method of Rockefeller and Armour and many others of the old régime. A combination might be formed for one of two reasons: The first was to float a lot of stock and bonds on the market. The promoters did not care what happened after that.

The second reason for merging was to create a monopoly and boost prices. Sometimes this was combined with the stockjobbing; the one did not preclude the other. The promoters thought that the geese could not be killed; the law was passed partly to protect the public and partly to give legislators a firmer control over graft.

At the Bottom of Big Business

But neither promoters nor politicians were right. Some of the corporations were inflated to such a degree that they simply blew up. Others were strong enough to carry out their intentions; they tried to kill competition, first, by purchase and then by price cutting. Sometimes they had to give up the fight and turn to earning money; sometimes they did get rid of competitors and start to force prices.

For a little while they had their way, although they never earned much money Henry Ford earns annually more than all the competition killers ever earned together. But as soon as competition was officially killed and prices were pushed up, other concerns began to enter the field. For if the price were high enough, then it required no great skill or capital to start in competition!

The higher the combines pushed prices, the more competitors bobbed up — willing to be bought off at a figure. One of the ironies of all the competitor killing period is that the big money was made in building factories to sell to the trust. It was the Sherman Law that stopped this merry game and, by forcing the big trusts to attend to business, taught them that the real money was in attending to business.

The prosperity of this country started from the time when the big corporations get down to business. By no means all of them got down to business. Those who did centered around the personality of some one man. The Steel Corporation became Judge Gary, the American Woolen Company became W. M. Wood, the low-priced automobile became Ford, the medium priced became Durant and Willys and the Dodges; tobacco was James B. Duke; copper was John D. Ryan; the cotton-seed-oil industry was another name for A. C. Bedford. And so we might go through each industry, picking out one or two great corporations and one or two big men.

The old thought was that an organization could be semi-automatic — that if only well enough organized, the personnel did not count. Bankers often combine companies and, by adding up the assets and business, tell you that the combined company will have such and such a volume of assets and business. The companies may have the assets, but whether they will have the business depends upon the man at the head. The brute force of aggregated capital has been overestimated, and so has the brute force of volume production. A child is safer with a toy pistol than with an army revolver.

It is the same in business. Very few men are capable of handling large affairs; it requires a certain genius which no one has yet been able to define.

In every industry the important element is the making of the right decision at the right time. The decisions may have to be made only once a month, or once a year, or once in ten years. That is why the late J. P. Morgan could direct so many enterprises from his yacht — he had the capacity to make a very high average of right decisions when decisions were required.

There is never very much of this genius, and the only avenue through which it can be used to the fullest extent is the large corporation. Thus, if we do not have the great enterprises, we fail to make use of a most important section of human resource.

It is human resource which is at the bottom of big business. It is really our greatest resource. The truly big man — and we have perhaps fifty of them — eliminates competition if he is given the chance. But he eliminates it by turning out a better or cheaper product than anyone else.

We have taken it for granted that competition is the life of trade and that monopoly is the death of it. This it true only to a limited extent. A forced monopoly is the death of trade because there is practically no incentive to better methods. But is competition the life of trade? Take a few cases. In an industry which I investigated one manufacturer made an article for $6.78; another manufacturer made exactly the same article for $3.62. Both used the same kind of material and both paid the same union rate of wages. In another industry the low cost on an article was $3 and the high cost $4.04, with an average cost among a large number of manufacturers of $3.52.

Yesterday, or To-morrow?

None of these manufacturers had known their costs. They had made their prices on the market. If "A" quoted $4.50, then "B" would quote $4.25, and "C" out to get business, would say that if these men could make at such prices, then he could go under them and he would quote $4.10. In the course of time the weaker members of the trade would cut themselves out of business. Then prices would go up again, new competitors would appear and the same process would begin all over again. Instead of the public gaining through steady, reasonable prices, it was either being mulcted by too high prices or buying below the cost of production — and eventually paying for the capital lost through bankruptcies.

That is one part of the loss; a greater loss is in the consequent irregularity of production which this in-and-out method involves. The larger the concern the less it can afford to shut down — that is, if size also means efficiency. For the best methods of production require much costly machinery — and it has to be used to be profitable. The glass blowers' trade used to be very seasonal; a glass blower was known as a highly skilled, highly paid artisan — who rarely had any work. A concern spent more than a million dollars developing a bottle-making machine. Now we do not have many skilled glass blowers. But the men who make bottles have practically year-round work, and bottles have ceased to have much value. Druggists no longer give allowances for other than exceptional bottles; in fact, it costs them more to buy, wash, and sort old bottles than to buy new ones.

Only the large corporation can use our best human brains — only the large corporation can get the most out of machinery. We must have the large corporation in order to cut out the wastes of handling and the charges of unnecessary stoppages. Years ago half a dozen or more railways controlled the route from New York to Albany. Passengers had to change cars frequently and wait around for trains on the connecting roads. A journey to Albany was an affair of moment; now one railway takes us right through. We kick if the train makes too many stops — even though we do not have to change cars. We insist that the roads run through trains between New York and Chicago. Yet the old railroading, in which not only did passengers have to change, but freight had often to be transferred from broad-gauge to narrow-gauge tracks, was in an advanced condition compared with the ideals of competitive, small-unit business.

We could not carry the traffic of the country with the old organization of railways. We are even now combining the railways into great systems to get rid of the wastes of traffic competition. We shall have to do the same with business. The business of the future must, in order to pay high wages, high dividends, and give the fullest service to the people, be in large units. Our laws do not as yet take this into account; they speak a language of a past generation. Is it now high time that we squared our laws with the economic facts; Why not stop trying to destroy and start trying to build? Why not think of to-morrow as well as of yesterday?

BOOK REVIEW

MANUAL OF INDUSTRIAL CHEMISTRY, Edited by Allan Rogers, D. Van Nostrand Co., New York, U. S. A.

We all like to see a good thing grow, and certainly the growth of Rogers' Industrial Chemistry has been remarkable. The third edition, of which we have a copy, is thoroughly revised and enlarged, and already is in the second printing. More than 14,000 of these books have already been distributed which is evidence of the excellent service which the book gives. More than 40 eminent technologists have collaborated with Professor Rogers in the production of this compendium on the principles and practices in the various industries based on chemical engineering processes. The book contains 1,232 pages which includes an excellent index of 24 pages, and there are 377 illustrations. An excellent feature of the book is the series of bibliographies following the various chapters.

There are 52 chapters, of which the first three are introductory, and cover general processes and equipment, water for industrial purposes, and fuels.

We notice a considerable improvement in the chapters relating to the paper industry and cellulose. We may say, however, that the book holds its greatest value for those connected with the paper industry in the wealth of information given on other industries which are contributory or supplementary to the manufacture of pulp and paper. Among these may be briefly mentioned the manufacture of general chemicals, textiles, leather, lubricating oils, dyestuffs, cement, rosin, wood distillation products, paint, etc.

The editor has been using this book since its first appearance, and considers it the best single volume on the subject of industrial chemistry that is available today.

There is one thing that even God cannot do. Even when we repent He cannot give back the lost and wasted years.

PULP AND PAPER NEWS

R. E. Rudd, manager of sales for the Eaton Dikeman Co., manufacturers of blotting papers, Lee, Mass. was in Toronto last week calling upon the trade.

David F. Robertson, general manager of the Canadian Paperboard Co., Montreal, was in Toronto recently on a business trip.

The possibilities of the Ontario hinterland from a settlement point of view and the natural resources of the North will be investigated first hand by Hon. James Lyons, Ontario Minister of Lands and Forests, and Hon. Charles McCrea, Minister of Mines, who will spend the next two weeks on a tour to all important points.

The meeting of the first mortgage bond holders of Clarke Bros., Limited, Bear River, N. S. which was to have been held in Toronto last week, was postponed until October 18.

W. H. Lytle, for many years associated with Buntin Reid Co., wholesale paper dealers, Toronto, has embarked in the business stationery line with Laurence E. Grigg, late sales manager of the United Tyewriter Co., Toronto, under the name of Grigg and Lytle. They have secured premises at 103 Simcoe street, Toronto.

Fire broke out recently in the plant of the Lennox Paper Mills at Camden East, Ont., starting in the stock room. The latter was destroyed along with the office and a large boarding house. Good work on the part of the flame fighters prevented the loss of the mill. It is understood that production will not be interfered with.

Bradshaw's Limited, Toronto, are now completely installed in their new home at the corner of Symington Ave. and Adrian St. The building, which has been erected by the firm is 63 by 208 feet and is of daylight construction, consisting of one storey and basement. It affords ample room for the expanding business of the company in the paper converting line.

H. L. Wilson of the Winnipeg Envelope Co., Winnipeg, and the Pioneer Envelope Co., Vancouver, was in Toronto last week calling upon the members of the trade.

Paper Sales, Limited, Toronto, report business as much improved during the past month. The company have taken extra office space in the Colonial Buildiing in order to afford them sufficient room for expanding activities.

F. W. Snyder, of the Warren Mfg. Co., New York city, makers of Regal typpan paper, which is handled in Canada by Paper Sales, Limited, Toronto, was a caller upon the trade last week.

John Gibb, manager of the stationery department of Clarke Bros. and Co., Winnipeg, transacted business in Toronto and other points east recently.

William Martin, of the printing department of the United Typewriter Co., has taken a responsible position with Litho-Print, Limited, 381 Adelaide St. west, Toronto.

John Martin of the John Martin Paper Co., Winnipeg, and former President of the Canadian Paper Trade Association, is in the east on a visit to his many friends in the trade.

The old rossing plant site of the Riordon Co. at Haileybury, Ont., will soon have a new industry operating there. The Haileybury Lumber Co. is erecting a wood working plant on the premises.

M. Cochran, manager of the pulpwood activities of the Hammermill Paper Co. of Erie, Pa., with headquarters in Ontario at Port Arthur, states that the demand for pulpwood this season in that district will be about the same as last. Although some mills will not require as much wood as last season, owing to the fact that they have considerable stock on hand, the new mills in the district will bring the requirement up to approximately what it was. None of the large jobbers made any money last season owing to unfavorable driving conditions and there is a considerable amount of wood hung up in the various rivers. The proposed embargo has not resulted in Americans coming in and securing or shipping any larger quantities than customary. The American mills were fortunate in obtaining a large percentage of their purchases in the matter of delivery and, while they may not be big buyers in and around the Port Arthur district during the coming season, it is not anticipated there will be any increase in their demands.

E. J. Mehren, vice president of the McGraw-Hill Co., New York, addressed a large gathering of business and technical newspaper representatives at the King Edward Hotel. Toronto on October 11. He gave an interesting and instructive review in business and editorial methods, and co-operation.

It is understood that the Port Huron Sulphite Co., of Port Huron, and the Munising Paper Co., of Munising, Mich., have entered into contracts for several thousand cords of wood in the district around Hearst, Ont. There were 30,000 cords taken out in that district last season and about the same quantity will be cut during the coming one.

Word has been received in Toronto of the death of J. W. Cunningham, editor of the Daily Columbian, New Westminster, B. C., and former proprietor of the Edmonton Journal. He was born in Streetsville, Ont., and was a graduate of Toronto University.

The sixth annual meeting of the Selected Town Weeklies of Ontario was held last week. The association now embraces a membership of forty-six. L. S. Gowe, the manager, made an encouraging report. J. E. Eddy, of the St. Mary's Journal is the new president of the organization, succeeding David Williams of the Collingwood Bulletin.

E. C. Young, who for a considerable period has been business manager of the Chronicle Publishing Co., of Halifax, N. S. has been appointed treasurer of the Globe Printing Co., Toronto, Mr. Young held an executive position on the business staff of the Montreal Star for some years.

W. T. Bayly, who for two years past has been on the mill staff of the Interlake Tissue Mills Co., at Merritton, Ont., has been transferred to the head office of the company in Toronto and is now a member of the sales force. Mr. Bayly is a former resident of London, Ont. He is one of the first students enrolled in the correspondence course in Pulp and Paper Making, conducted by the Institute of Industrial and Domestic Arts, Gardenvale, Que.

Miss A. V. Thomas, of New York, demonstrator for the Arabol Manufacturing Co., is spending a few days in Ontario in connection with the work of the company.

Mr. T. D. Pickard of Windsor, N. S., in connection with evidence given by him before the Pulpwood Commission, stated that the lumber company with which he is connected is considering the establishment of a pulp mill.

Mr. C. R. Whitehead, President of Wayagamack Pulp and Paper Co., Ltd., is at present in England where he is combining business with pleasure.

Mr. Colin Richie has joined the Canada Exhibition Train in France, where he will make a most able representive of Canadian kraft.

Mr. Eric Pyke of the foreign trade branch of the sales department in Wayagamack Pulp and Paper Co., will leave shortly for South Africa, where he will be connected with the firm of W. H. Smith and Co., paper agents.

NEW BRUNSWICK NEWS

The New Brunswick sessions of the Pulpwood Commission will be held in St. John, Fredericton, Newcastle, Bathurst, Campbellton and Edmundston. It is possible that several additions will be made, there being predictions that Moncton, Woodstock, and St. Stephen will also be chosen for sessions.

The Pejepscot Pulp and Paper Company has had a record summer season in cutting on the areas owned by the company at Salmon River, N. B. The operations of last winter would have resulted in a record cut for a winter season had not the operations been discontinued in January owing to the immense quantities of snow and the intense cold.

Indications are that operations of the pulp and paper companies and individuals in the New Brunswick woods, during the winter cutting season will be considerably hampered by a dearth of men. During the spring and summer, thousands of men who usually work in the woods in the winter, crossed the line into New England, and others went to the West. Unless a goodly percentage of these men return to New Brunswick soon, the pulpwood operations will be curtailed. The scarcity of men is not felt as much in the central and lower sections of the province, as in the northern districts, where the migration has been greatest.

PAPER TRADE ASSOCIATION MEETS IN MONTREAL

The fifth annual meeting of the Canadian Paper Trade Association met in Montreal on Tuesday and Wednesday of this week. The business session occupied the greater part of Tuesday, and the reading and discussion of papers extended into the Wednesday gathering. There was a very good attendance, members coming from as far as Vancouver at one end of the continent, and St. John, New Brunswick at the other. The mill relations committee met with representatives of the Canadian Pulp & Paper Association. It is coming to be more and more recognized that the manufacturing and distribution of paper are really all one industry, and that the general good is best served by the most cordial relations and co-operation between the different branches. The Association luncheon was held on Tuesday, and the annual dinner on Wednesday evening at the Windsor Hotel. Needless to say, the meetings and social functions connected with the annual convention brought enjoyment and benefit to all who attended.

The papers will appear in an early issue.

British Trade News

From Our London Correspondent

October 1, 1923

Today the preliminary business of the Imperial Economic Conference commences in London and among the many subjects to be discussed will be the question of tariffs between Canada and Australia. Some of the unimportant newspapers and trade papers in London predict that the Dominion will stand a poor chance in any tariff negotiations; but these very same papers preached "Trade Within the Empire" three years ago and then gloated over the preference given to British made — or at least, English made — paper by the Australians at the expense of the Dominion of Canada, which did more for the Mother Country in the war than any other colony or Dominion under the Union Jack. If Canada is not placed in the same category as English papermakers on the tariff list of Australia, it will be one of the greatest misdeeds Australians ever committed and they will never hear the end of it. It is surprising that any sensible Australian could be cajoled into making the preference they did; and, as for saying that there is American money in Canadian mills, well, Australians should be reminded that they are using paper produced from German, Austrian, Bavarian, Bulgarian, and Scandinavian pulps. I do hope the Canadian representative at the Imperial Conference will settle this dispute — an outrage on Canadian paper mills. Outside the few mills supplying Australia the feeling is strongly in favor of Canada; indeed, one prominent merchant said not long ago that it was tantamount to a mother robbing her daughter in the greed for trade.

What the "Experts" Say

There is a short note on "Australian Preference" in the *Paper Trade Review*, of Sept. 28, with some innuendos on a *Times* (trade supplement editorial. It says: "Canada's effort to secure preferential treatment from Australia for her products do not appear to be meeting with immediate success. When this country was given favorable terms for its newsprint our Dominion friends were much perturbed and at once took steps to obtain equal conditions. So seriously was the matter viewed that the Canadian Minister of Trade and Customs (Mr. Robb) made a special visit to the Commonwealth and high hopes were entertained that some success had attended the mission. Now it seems there is little prospect of the early adoption of a reciprocal trade arrangement between Australia and Canada, judging from information furnished by a Melbourne correspondent of the *Times* (Trade supplement) who states that the Dominion has submitted a proposed schedule of preferential duties which the Commonwealth Government is not prepared to accept. The impression is current in Australia that Canada is seeking more than a *quid pro quo* and that the measure of preference desired would reduce the protection accorded to Australian industries, rendering it in many cases ineffective. There the matter stands for the moment and the position of British paper in Australia maintains its advantage. When the Imperial Economic Conference meets next month, however, the matter will be discussed by the respective Ministers attending. British interests will watch the progress of events carefully." Of course the note is based on the *Times* statements, but the Conference this month may upset everything. Canada has as much right to the preference as the English mills. Again, Canada should not be on the list on the same scale as a foreign country: we all belong to the one Empire — but where trade is concerned some of our friends forget there is still the slogan "Trade within the Empire!" and that Canadian paper mills are as good as English paper mills in more ways than one.

Paper and Pulp Trade

The British paper industry shows a very slight improvement and there is a more optimistic feeling prevailing. Reports from the mills up and down the country show that they are keeping steadily moving, only the newsprint firms showing any signs of liveliness.

In the pulp market business is still dull and not very hopeful of reaching larger dimensions in the near future. Supplies continue to arrive, under contracts, in large quantities and most of the mills are well supplied. The other day 500 tons of chemical (wet) arrived from Canada. Latest prices are about as follows:-

Bleached sulphite (No. 1)	£19½	c.i.f. U.K.
Easy bleaching (No. 1)	16	"
Strong Sulphite	14	"
Unbleached Soda	16	"
Soda Kraft	15	"
Groundwood moist	5	"
Groundwood dry	10¼	"

The supplies from Canada should be heavy this year and well above the shipments of 1922.

Fowey Developement

A new quay has been opened at Fowey to deal with the export of China clay. The demand lately has been so strong that it was necessary to facilitate the exports in some way and a quay was decided upon.

The German Position

The collapse of the mark and the new currency in Germany — as well as unsettled events — have upset German exports of pulp. It is not exactly known what the German pulp makers propose to do, but I am informed that the timber merchants and exporters have formed banks of their own. Very likely the pulp men will join them, particularly on account of the short credit terms forest owners are allowing just now. Recently Russia gave some big forest concessions to a timber syndicate in Germany.

The interview with Sir Frederick Becker on the subject of straw, as a raw material in pulp making, which appeared in the "Pulp and Paper Magazine", has caused considerable interest in England and many of the papers have quoted it. Production of paper from straw has always been a pet subject amongst the technologists and there is a feeling now that Sir Fred Becker and those engaged in the recent tests are bringing things to a settlement. It will be a fine solution for the farmers of Canada in regard to waste straw, if the schemes mentioned by Sir Frederick are put through successfully and the thanks of the paper industry generally are due to him for the part he has taken in the new process.

Profited by Australian Tariff

Spicers, Ltd., the well-known London paper firm, have evidently reaped success under the special preference given in Australia for British produced paper. Mr. H. G. Spicer, chairman of the firm, hopes that the principle will be extended to papers beyond newsprint. The extra preference given to England was a real help in keeping the newsprint mills running, he added at the annual meeting of the company and commercial reciprocity is what the Empire now wanted.

The Japanese Earthquake

It is feared that some of the British paper firms have suffered considerable losses in the earthquake in Japan. Most of the sellers of paper from London and other firms reported direct of their safety, but there are still a few reports to arrive yet.

Dividends and Reports

Messrs. Edward Lloyd, Ltd., have declared an interim dividend of 18 cents per share free of tax.

The report of Y. Trotter and Son says that a dividend of 5 per cent on the ordinary shares is proposed. In 1921 and 1922 only a perference dividend was paid.

Armstrong and Whitworth have declared an interim dividend on ordinary shares of 12 cents per share less tax.

PAPER MAKERS SEE BUSINESS CONDITIONS AS SOUND

New York, Oct. 15, — "The paper industry has little from the future, for the basic conditions of the country are sound," says the October market review of the Paper and Pulp Industry, the monthly bulletin of the American Paper and Pulp Association. "In the paper industry itself there is a general sentiment of conservative optimism.

"In the fine paper field, the costs are as high as they have been, stocks at the mills are normal, while those in the hands of merchants and printers are below normal. The market is very firm for higher grades of paper, and the demand is fast returning. In this field, the manufacturers anticipate very good business all this fall, and well into if not all through the year.

"Book paper production for August showed a 20 percent increase over July, and shipments were 18 percent above those of July. Canadian coated paper quotations have gone up a half cent, based somewhat on the high prices for casein, but the casein situation at present is much more favourable than in the early part of the year. Coated paper consumption suffered somewhat from enforced changes to super-paper by big consumers, owing to the increased cost of making casein coated papers. With Argentine casein again in the market, even though at high prices owing to the unwarranted duty, the situation is somewhat less difficult than earlier in the year.

"The wrapping paper situation will certainly be quick to show a response to an improvement in business, as in many ways the wrapping paper field is more responsive than other grades to changes in business. When the housewife is a free buyer of food stuffs, the wrapping paper demand immadiately reflects this improved situation.

"The improvement in the paper board group is also indicative of an improvement in public commodity buying, and the wrapping and bag groups should not be far behind the 25 per cent increase in board production recorded for August as compared with July.

"Specialties, such as waxed, vegetable parchment, and other food protective papers as well as the glazed and fancy papers used by the box manufacturers are already showing improvement.

"The New York newspaper pressmen's strike will not be long time factor in the newsprint situation. Some of those close to the situation expect an increase of 10 percent in newsprint consumption the coming year, over 1923."

Woodlands Section

BRITAIN COUNTING TREES

Good progress is being made with the census of woodlands in Great Britain conducted by the Forestry Commission. The work is being done in Scotland by the commission's own staff and local correspondents, and in England and Wales through voluntary consultative committees with the assistance of the Inland Revenue Department.

It has been said that the United Kingdom is the most poorly wooded country in Europe, with the exception of Portugal. The census will settle the question, though it is feared that the statement will prove only too true, having regard to the depletion of woods during the war, when practically all the reserves of mature coniferous timber were felled.

The forestry Commission is proceeding with its task of replanting on the restricted scale rendered necessary by the position of the country's finances. The Committee on National Expenditure recommended that the afforestation policy adopted by Parliament after the war, when the Forestry Commission was established, should be completely scrapped. That policy was to revive the almost exhausted timber resources of the country by growing trees on some of the millions of acres of waste land. The suggestion of the Committee on National Expenditure was rejected by the Cabinet. It would have entailed the waste of much useful work of reconstruction already done. It would also have prolonged indefinitely the period during which the country was left quite unprepared for the world timber famine, which is apprehended at no distant date, owing to the constantly increasing demand for timber and the working out of the virgin forests.

The Cabinet decided, however, that the provision for planting for the next two years should be on a reduced scale, entailing a temporary departure from the original programme, though still admitting of the afforestation of ten thousand acres each year.

The principal scene of the commission's operations so far is in the Eastern Counties. Here over thirteen thousand acres of derelict land—once cultivated, now little more than a rabbit warren—have been planted, mostly with pines.

REDUCE STUMPAGE ON BURNT TIMBER

Quebec, Oct. 16.—Hon. Honoré Mercier, minister of lands and forests, announced this morning to the Canadian Press that an order-in-Council had now been signed making a further reduction in the tariff of stumpage dues to be collected on burnt timber.

A week ago a delegation of representatives of nearly all the large timber limit holding companies waited on Premier Taschereau and the members of the Cabinet, and suggested that further reduction be made to allow the cutting of burnt timber to be more profitable than it is at the present time, as with the new tariff to come in force the revenues would be very small, and in many cases the exploitation would be practically impossible.

The Cabinet took the matter under consideration, and this morning as a result the following changes were made:

White pine, $2 per 1,000 feet instead of $3.50; red pine, $1.75 instead of $2.75; spruce, balsam and other woods, $1.50 instead of $2.10.

A few weeks ago the Government announced that the 1920 tariff of stumpages, the enforcement of which had been delayed at the request of the lumber interests to encourage the operation of lumber camps at full swing and relieve unemployment, would be in force this year. A provision had been made, however, by which the reduction was given on burnt timber. The order-in-Council now passed provides that the 1920 tariff will apply for green timber though it does not affect burnt timber.

It is expected that the activities of lumber camps this year will be mostly connected with the cutting and exploitation of fire killed wood.

CAN GROW TIMBER IN N. S.

The principal witness at the hearing of the Pulpwood Commission at Digby, N. S., was F. C. Whitman, of Annapolis, who has been more or less connected with the lumber industry since the seventies and has taken an active part in the conservation of the forests of this part of the Nova Scotia Hydro Commission. He gave very valuable information on practically every phase of the question which the Commission is investigating, particularly regarding fire control, growth of trees and conservation measures.

"If fire was kept out," he said. "it would be impossible to cut the pulp wood out and denude the land. Renewal growth is so fast that you could not cut this counry out. The value of our land is greater as a pulpwood than as a lumber proposition. The proper way to handle the matter in Nova Scotia is as a crop proposition, that is, not to cut more than the annual growth, and not cut too closely. In country such as pasture lands and places not densely forested white spruce will reproduce good 12 inch boards in forty years, and it should be cut out when it attains a certain size. Black spruce takes 120 years to reach a similar size, and may never reach more than pulpwood size as the condition of the country is such that it cannot be steadily lumbered. There were large tracts of pulp lands which were of no value until the fire laws were applied and are now of more value for pulp than for timber."

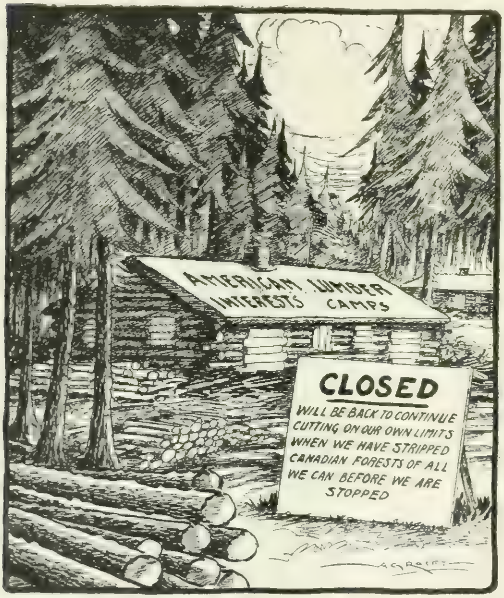
LORD LOVAT IMPRESSED WITH B.C.

London, October, 13. — Lord Lovat, chairman of the Forestry Commission on his return from a trip to Canada, expressed great satisfaction with the results obtained at the Imperial Forestry Conference. He was tremendously impressed by the forest resources of British Columbia, and also impressed by the organization of Canada's timber industry and the rise in the pulpwood trade.

25,000 LUMBERMEN IN QUEBEC WOODS

Quebec, Oct. 16—The next winter's cut of the Quebec forests is expected to be one of the largest in recent times. Over three thousand lumber camps are due to be in operation, employing in the neighborhood of 25,000 men, according to Chief Forester Piche. He stated there was a scarcity of labor in some sections of the lumber district, and that, consequently, higher wages were being offered as an inducement to go out into the woods for the winter.

The department is keeping men engaged in patrolling the forests in certain sections of the province, mostly the western part, which is regarded as the most dangerous spot, and these men, in addition to patrolling the forests in their capacity of forest rangers, were also checking up on lumber operations and reporting to the department.


AMERICAN LUMBER INTERESTS CAMPS
CLOSED
WILL BE BACK TO CONTINUE CUTTING ON OUR OWN LIMITS WHEN WE HAVE STRIPPED CANADIAN FORESTS OF ALL WE CAN BEFORE WE ARE STOPPED

From Cartoon in Montreal Star.

AFFORESTATION ON KERRY HILLS

It is reported that the Forestry Commission have acquired about 1,800 acres on the Kerry Hills, in Montgomeryshire, for the purpose of afforestation, and the work of clearing the ground is to be proceeded with at the earliest possible moment in order to absorb unemployed labor. During the war many hundreds of acres of woodlands were felled on these hills, the soil and situation of which are well suited for the production of conifer timber

Locally it is hoped that this scheme will be the means of multiplying small holdings, as nurseries of labor for the forests in winter. A staff of approximately fifty may be engaged on clearing, fencing and planting; the maintenance of the forests will also mean the permanent employment of a considerable number. Eventually sawmilling and a box and basket making industry may be established in the neighborhood.

Up to the present the Forestry Commission have acquired approximately 171,000 acres of land in Great Britain, of which 114,000 acres are reported to be land that can be planted. Roughly, half of it is distributed throughout England and Wales, and half throughout Scotland. The land actually planted in Great Britain up-to-date amounts to more than 27,000 acres. These figures do not take into account land acquired by the Commission in Ireland before the formation of the Free State.

THE APPRENTICE INDENTURE OF JOSEPH JURDIN

The following is reprinted from *Paper Trade Journal* early in 1893 and is said to be the indenture of the father of Joseph Jordan who invented the refining engine now known as the jordan.

This Indenture, made this twelfth day of October in the year of our Lord one thousand eight hundred and ten, witnesseth that Joseph Jurdin residing in the township of Newark in the county of Essex, State of New Jersey, aged Nine years ten months and eight days, son of John Jurdin of the town, City and State aforesaid, hath of his own free and voluntary will, by and with the consent of his father aforesaid, signified by his signing these presents, placed and bound himself an apprentice with Robert Bird of the city and county of New York merchant.

The said Joseph Jurdin to be taught the trade mystery and occupation of a paper maker and after the manner of an apprentice to serve from the day of the date hereof for and during and until the full term of Eleven years, one month and twenty-two days next ensueing, fully to be completed and ended, during all which term the said apprentice the said master will and faithfully shall serve, his secrets keep, his lawful commands everywhere readily obey, hurt to his master at any time he shall not do or willingly suffer it to be done by others, but of the same to his power forthwith give notice to his master; the goods of his said master he shall not embezzle nor waste, nor them lend without his consent; at cards, dice, nor any other unlawful game he shall not play; taverns he shall not frequent, fornication he shall not commit, matrimony he shall not contract; from the service of his said master he shall not at any time absent himself without leave but in all things be as good and faithful apprentice shall and will behave and demean himself towards his said master; the said master the said apprentice the said trade mystery or occupation of a paper maker shall and will teach or cause to be taught well and sufficiently in the best way and manner he can and shall also find the said apprentice sufficient meat, drink, washing, lodging and wearing apparel fitting for an apprentice during the said term of Eleven years one month and twenty-two days. The said master also agrees to give the said apprentice one Quarter's Evening schooling in each year during his apprenticeship and the said John Jurdin doth for himself his heirs Executors and administrators hereby covenant and agree to and with the said Robert Bird that the said Joseph Jurdin the within named apprentice shall and will in all things keep and perform all and singular the several matters and things in this indenture mentioned in his part to be kept done and performed in witness whereof the parties to these presents have hereunto interchangeably set their hands and seals the day and date first above written

Robert Bird (seal)

his
Joseph X Jurdin (seal)
mark

John Jordan (seal)

Signed sealed and delivered in the presence of
Garret Von Houten
Edmund Langstroth

UNITED STATES NOTES

Construction has been started, according to an announcement from Seattle, on the main building of the Columbia River Paper Mills. It will be several months before the paper mill is entirely completed and ready for use.

Sidney L. Willson, president of the American Writing Paper Company, was appointed ancillary receiver for the corporation by United States Judge Lowell in Boston on the petition of Michael J. Murphy of New York, who alleged in a petition that the company is perfectly solvent but being embarrassed financially temporarily might be made the object of no little embarrassing and expensive litigation. In the petition liabilities of the company are scheduled at $13,302,216, as against assets of $20,358,405. A similar petition filed recently by Emanuel W. Kaiser was dismissed without prejudice.

The strike among operators in the folding department of the paper box industry in New York City, which has affected more than half of the plants in the city's leading boroughs, was practically settled last week with the return to work of 80 per cent. or more of the strikers. According to the union's attorney, eighty-nine paper box manufacturers have signed agreements with the workers' organization granting the principal demands presented by the union when a general strike was declared October 3rd.

Shipments of paper from the United States during the month of August showed an increase, according to figures of the Department of Commerce. Exports for the month reached a total value of $2,172,840, compared with $2,079,267 during July, and $2,076,895 during August of last year. The value of wrapping paper exports during the month of August was greater than in July, 1922, although there has been an actual reduction in the volume shipped. Exports of newsprint were slightly greater, but they were still almost 50 per cent. under those for August, 1922. Book paper exports, which previously showed a general upward tendency, have again fallen off. Other items of the paper schedule, exports of which improved during August, compared with July, are: writing paper, valued at $89,530; surface coated paper, valued at $63,763; toilet paper, $63,316; wall board, $54,567, and paper bags, $66,772. Exports of writing paper and paper bags, however, were less than during August, 1922, and shipments of all board are valued at approximately $4,000 less than July, 1923, although the volume of the exports are somewhat greater. Shipments of photographic paper, tissue and crepe paper, and boxes and cartons declined compared with July, but all showed an increase in volume, and the two last in value, compared with August, 1922.

Allan Juselius, General Manager of the Union Bank of Finland, who arrived in New York last week for a visit to the United States, declared that the high prices paid for newsprint paper have resulted in the building up of the newsprint industry in Finland to large proportions and this revenue has materially helped Finland in its return to prosperity. The Finnish Government, said Mr. Juselius, is one of few European governments with a balanced budget. Mr. Juselius is conferring with New York bankers. Finland needs additional money to develop its resources, he said, but he denied that his visit was for the specific purpose of arranging a loan. Such a loan, he suggested, would be arranged by the Finnish Government, but he expressed confidence that if a loan is required it would be sought in America. "Business conditions in Finland are healthy," Mr. Juselius said, "and we have practically no unemployment problem. Last year the exports of Finland exceeded her imports by a substantial margin, and indications this year are they will at least balance."

PAPER INDUSTRY URGED TO FIGHT FOREST FIRES

Chicago, Ill., Oct. 10.—Forest fire prevention as the primary objective of the woodlands departments of the paper companies of America was urged before the Woodlands Section of the American Paper and Pulp Association at its convention this afternoon by C. M. Porter, the Section's Secretary, himself a technically trained forester.

His recommendations came significantly during the observance of National Fire Prevention Week, and he urged the industry to devote every effort to the elimination of the fire menace to growing timber.

"Probably the largest single problem confronting the paper industry," he said, " is adequate supplies of pulpwood. The proposed Canadian embargo only intensifies this problem. We are not prepared to state what effect the enforcement of this embargo would have on Canada's forest problems. It is our belief, however, that the forest problem of both Canada and the United States could, in a large measure, be solved by adequate fire prevention. After this come reasonable forest taxation, some form of practical forest management, and reforestation."

Enclosed is copy of the October program, also copy of the business statement which will be distributed at the forenoon session of the joint conference, Thursday, October 11. It is released for publication at that time.

You may be interested to know that "Industry" published by the Associated Industries of Massachusetts, features in its September 29 number a review of the group insurance system just installed by the International Paper Company. If you have not this publication on your exchange list, it is in our library if you wish it.

BOUNTY ON AUSTRALIAN SULPHUR

Because the domestic production of sulphur is regarded as a national necessity, the Australian Parliament has voted £100,000 a year to provide a bounty of £2. 5s. per ton on all sulphur produced in the Commonwealth from local pyrites. The free importation of Louisiana sulphur recently caused Australian pyrites mining to cease.

UNITED STATES FORESTRY NOTES

If forest fires start after the big game hunting season opens in Maine, Tuesday, of the present week, a proclamation will be issued suspending the open season until after a heavy rain, read a warning issued last week by Governor Percival Baxter. Calling attention to the condition of the forests, which are unusually dry for this season, Gov. Baxter said careless hunters were responsible for many fires. "Suspension of hunting will cause hardships to law abiding hunters, and many innocent will suffer for the transgressions of the few," the Governor's warning pointed out.

J. T. Carey, President of the International Brotherhood of Paper Makers, has sent a letter to the press giving its views in the matter of the establishment of a regulatory district for water power development in the Adirondacks. Mr. Carey refers to the Committee for the Prevention of the Exploitation of the Adirondacks as "a group of men of large means," who own private hunting preserves in the Adirondacks "from which they rigidly exclude the public, and who oppose every effort to use the State lands in the Adirondacks for the benefit of the people and of the State itself."

Mr. Carey adds:

> "They are now opposing the State itself or lessees of the State developing water powers on lands owned by the State and transmitting that power to market. Among their reasons for opposing such actions are that it will be but an entering wedge to the cutting of trees on State lands. These same gentlemen have to their own profit cut the matured trees on their own private parks, selling pulp-wood and lumber for the best prices obtainable, and in that way produced a revenue for themselves as well as an improvement in their forest, but they are opposing the State doing likewise.
>
> The United States Government and every other State in the United States except New York permit removal and sale of mature timber on their lands. The forest-growing countries of Europe all pursue such a policy. New York State stands alone in its opposition. The opposition in the State of New York has for years been fathered and financed by the park owners referred to.
>
> How long will the people of this State be deceived by the paid propaganda of the wealthy park owners and deny to the State the profit that they take for themselves, and who wish to have 2,000,000 acres of State land forever locked up as an auxiliary to their private hunting parks?"

The question is to be decided by a referendum vote at the State election, November 6, when it will be submitted to the electorate in the form of an amendment to the State Constitution providing for the use of not more than 3 per cent. of the Forest Preserve lands for the development by the State of waterpower for the public benefit, and permitting such waterpower development by private capital under supervision of the State and under leases not to exceed fifty years. The Northern New York Utilities Corporation, F. G. Carlisle, President, and several paper manufacturers in the Raquette River and adjacent regions are very much interested in the proposed hydro-electric development.

One of the latest innovations in forestry is being used to great advantage by the United States Forest Service. This is a machine which sets out seedling trees ten times as fast as the old hand planting method. Its capacity is from 12,000 to 15,000 trees a day, as compared with the best possible total a day per man of 1,500 by the hand planting method. The device is an adaptation of a machine made to set out tomato and cabbage plants, and it takes three men and two horses to operate it at capacity. In appearance the machine is something like a mowing machine and just about the same size. It has a plowshare arrangement in front, and back of the feeder are two metal wheels, which push the dirt around the recently placed tree seedlings and pack it down. It is run at the speed of the team's walk, and the two men needed beside the driver are kept busy placing the seedlings in the planting hopper. Extra features of the tree planter includ a marker that indicates where the next row is to go, and two hoppers containing water and fertilizer that function by a cam system, dropping the nutriment for the young trees around their roots just before the metal wheels fill in and tamp the furrow.

Forest fires sweeping over the northern part of Michigan and Wisconsin, and through northern counties in Minnesota early last week, caused thousands of dollars worth of property damage, and cost the lives of at least two persons. A child of three, caught by the blaze, as she was wandering through the woods near Mohawk, Mich., was burned to death. Several workers in lumber camps in northern Michigan were reported missing. One village was destroyed and a number of others were seriously threatened. The Michigan and Wisconsin conflagrations were due to hundreds of small fires which united after burning for some time, becoming a serious menace as they swept with greater vigor before strong west winds and gales.

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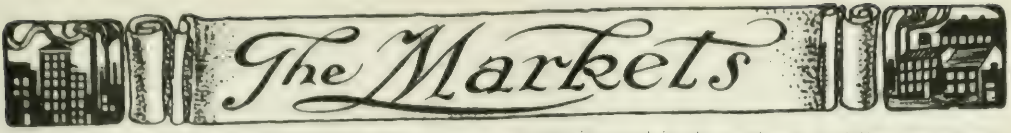
97 1-2 P. C. NEWSPRINT EXPORTS TO U. S.

Notwithstanding the large increase in Canadian production of newsprint for the first six months of 1923 as compared with previous years, exports to countries other than the United States and New Zealand have declined. In this connection it is interesting to note the increasing extent to which the United States is absorbing Canada's production, presumably at the expense of our export business in other countries. In 1921, 91½ per cent. of the total export went to the United States. This increased to 92 per cent in 1922 and 97½ per cent. in the first half of 1923, leaving only 2½ per cent. for all other markets outside of Canada. The consumption in Canada is from 120,000 to 130,000 tons a year, approximately 90 per cent. of production being sent abroad. Heretofore Australia has been the principal market outside of the United States, and the table given below, which shows the exports for the first six months of 1921, 1922 and 1923, illustrates how business in that market has declined. The reason given for this decline is the Australian preference for paper from British mills.

Countries of destination	Tons.	Tons. First 6 months of	Tons.
	1921	1922	1923
United States	292,615	421,365	536,817
Australia	10,315	17,942	5,163
New Zealand	5,276	5,615	6,095
South America	7,291	2,365	323
South Africa	3,241	4,123	2,427
All other	1,187	5,930	570
Total	319,925	457,340	551,395

The total Canadian exports of newsprint during the first six months of 1923 was 551,395 tons, as compared with 457,340 tons in the corresponding period of 1922 and 373,982 tons in the first half of 1921.



The Markets

CANADIAN TRADE CONDITIONS

There are still many ups and downs in the paper market and the situation is difficult to analyze. Some wholesalers report that trade has picked up considerably during the past few weeks while others do not note much change. Stocks with most jobbers are low and until their customers evince a disposition to order in larger lots — and not from hand to mouth.

there is not likely to be much alteration in the general situation. Spotty is the one word which covers the condition of affairs at the present time. In the printing establishments there is a rather unusual state of things, for some plants are so busy that they are working nights in order to catch up while others are very slack. In the specialty line business is very good just now. Price levels continue unchanged and there is no talk of any revision which was spoken of some time ago.

Newsprint is very strong and there is not likely to be any change in quotations during the coming season. Things are running smoothly and shipments are going forward satisfactorily. It is reported that the mills believe in leaving well enough alone and are in favor of a stable market rather than taking any action which might tend to decrease consumption. Any additional cost in wages, stock, etc., will be absorbed by the manufacturers.

Book and writing mills are fairly well employed but are looking industriously for orders. The expected resumption of activities has not materialized as yet. A clearer view of the whole situation will be presented at the annual meeting of the Canadian Paper Trade Association which is taking place in Montreal this week. Representatives will foregather from all parts of Canada and an important conference of the Trade Relations Committee with the manufacturers will take place. On the whole though the wholesalers report that volume so far this year is ahead of the corresponding period of 1922 and as, as soon as business revives in general mercantile lines, there will be a decided change in paper products. Colder weather would result in a greater demand all around.

Ground wood continues high in price and firm in demand. Other varieties of pulp are not in such active requisition but it is expected that the market will soon pick up. Paper box plants are getting busier but board manufacturers could stand a greater rush of trade. Envelope makers, manufacturing stationery houses and other allied lines are doing a fair business. In the meantime, there are no unusual features that characterize the market but a quiet confidence prevails and basic conditions are sound and stable.

* * *

A Montreal distributer of fine papers reports a slight but encouraging increase in the volume of orders, the aggregate of which for the first half of October being nearly equal to September's total. He remarked that the first part of a month always brings in the bulk of the business for that moon. Some lines of printing seem to be a little more active. An increase is noted in the tendency to follow up advertising with broadsides, envelope stuffers and bulletins.

A large printing and engraving concern in Montreal has built an addition that will greatly increase the plant's capacity.

NEW YORK MARKETS

New York, October 13 (Special Correspondence) — General business conditions in the States continue to make for a fairly heavy consumption of paper of most kinds. Newsprint consumption is exceeding all previous records; there is an increasing consumption of book paper; fine papers are growing more active day by day, and coarse papers are easily holding their own in point of consumption. Judging from statistics, business and industrial activity throughout the country is of broad scope. A new high record of freight car loadings was established during the last week of September; reports state that steel mills are employing more hands than ever before, though this is accountable in part by a reduction in working hours; other manufacturing industries with some exceptions, notably the textile industry in New England, are operating at large capacity, all of which is leading to a big consumption of paper and providing increased business for the paper mills of the country.

With the end of the year not so far off, members of the trade are commencing to speculate as to whether or not any change in prices of newsprint will be made by manufacturers for the first half of 1924. At the moment no upward revision of prices is indicated since it is known that some of the smaller paper manufacturing companies have let contracts for delivery next year at the price basis now obtaining, namely $75 a ton f.o.b. mills for standard news in rolls. The International Paper Company, which generally sets American print paper prices, has taken no formal action, but it has been reported here this week that the Canadian companies were planning on keeping the prevailing rate in force, and domestic manufacturers are not expected to do otherwise.

An official of the I. P. Company is quoted as follows in regard to prices of newsprint: "The International Paper Company has contracts for practically all the paper it can make next year, and in view of higher wages, freight and raw material costs, newsprint prices should be fractionally higher next year. Whether they will be or not is another matter."

It will be remembered that before the I.P. announced no change in price for the last half of this year expectations were that the price would be raised. Some in the trade look for at least a slight upward revision, basing their belief on the tremendous demand for newsprint and the fact that print paper is today proportionally lower in price than probably any other kind of paper in comparison with pre-war values.

Box board continues in a rather soft market position. This may be a local condition owing to the strike in the paper box industry in New York as reports tell of mills in the Middle West operating on a fairly broad scale and encountering much better business than those in the East. The strike of paper box workers in this city has diminished the consumption of boards here to a considerable extent. The strike appears to be gradually petering out but it has had local box plants pretty well tied up for a few days, and box manufacturers have naturally curtailed their buying of board.

Eastern board producers, in their anxiety to get business, have cut prices to $55 a ton delivered New York on both news and chip board. In fact, there have been reports of some sales down to $52.50 a ton though such sales, which if made, have been the exception. It is felt that a large accumulation of demand for box boards is being stored up and that once the labor difficulty in the local box industry is cleared up consumers will flock into the market to buy, thereby firming up prices again. This is the time of the year when board consumption usually is at its height, and prospects of big business following the termination of the strike are bright.

Book paper is quotably steady and the movement into consuming channels is on the increase. Fine papers are enjoying a fair demand though there is much room for improvement in this branch of the paper industry. Wrapping papers are moderately active, while demand for tissue paper is expanding. There is still a good movement of building papers of all kinds, and pronounced activity in bag papers.

GROUND WOOD—It is commonly acknowledged that water conditions in pulp grinding districts are improved, and that mills are gradually increasing their output of ground wood. No effect on the market, however, is thus far observable. Prices of ground wood are firm and there is a steady demand from numerous consuming sources; in fact, demand easily outstrips the offered supply and producers have no difficulty in finding ready buyers for all the ground wood they have to sell and at fully maintained prices.

Most current transactions in ground wood are at a price basis of $45 per ton or higher f.o.b. grinding plants. Moreover, most of the pulp figuring in sales is of Canadian origin. Domestic mills seem to have little or no mechanical pulp for sale, buyers depending on open market purchases to cover their requirements are obliged to look to Canada for the supply wanted. Prices of domestic ground wood range around $40 a ton at pulp mills but they are largely nominal, and in a good many instances grinders who ordinarily have a surplus of pulp to sell are now in the market as buyers against their own requirements.

CHEMICAL PULP—The price tone in chemical pulp is fairly steady, at any rate it is decidedly steadier than it was, and selling pressure appears to be diminishing. With the winter drawing near and with importers and producers anticipating a rush of demand from paper manufacturers before the year is out and prior to the closing of the Baltic to navigation, those having pulp in store seem better satisfied to wait a while before attempting to market stocks, with the result there is greater steadiness in quoted prices than has been noted in several months. Demand from consuming quarters continues limited. Paper manufacturers are purchasing pulp cautiously, and while occasionally sales involving good-sized tonnage are reported, the aggregate movement toward paper mills is probably less than is usually the case at this time of the year.

Buying interest in unbleached sulphite is keener than in any other description of pulp. No. 1 foreign unbleached sulphite is selling at 3 to 3.25 cents a pound ex dock New York, with extra strong sulphite quoted at around 3.35 cents, while domestic unbleached sulphite is bringing 3.25 cents or a little better for book grade and 3 cents for news grade. Bleached sulphite is hard to sell at above 4 cents a pound ex dock or f.o.b. domestic pulp mills, though now and then transactions at slightly higher prices are recorded. Kraft pulp is quiet, board manufacturers evincing little or no disposition to buy. ,

RAGS—Prices of papermaking rags are ruling rather stationary in a market characterized by fair trade activity. Mills are buying chiefly to cover direct needs and yet, in the aggregate, a comparatively good movement of supplies is in progress, while the tendency of values is, in a majority of cases, in an upward direction. Imports are increasing and this probably is the main factor keeping prices from advancing. Low grades for roofing paper mills are meeting with a ready sale and are bringing around 1.60 to 1.40 cents a pound f.o.b. New York for No. 1 roofing stock, and 1.35 to 1.40 cents for No. 2 packing, with sales of foreign dark cottons to felt paper mills reported at 1.50 cents a pound ex dock at this port.

New cuttings are quotably firm though they are moving in rather piecemeal fashion, reflecting the refusal of mills to purchase other than to cover pressing requirements. Old white rags are in good demand, and No. 1 repacked whites are fetching 7 to 8 cents a pound at dealers' shipping points, depending on the packing; No. 2 repacked 4 to 4.50 cents, house soiled 3.25 cents and street soiled 2.85 to 3 cents. Thirds and blues are steady in price at around 3 cents and up to 3.25 cents for selected quality f.o.b. shipping points, and 2.50 cents for miscellaneous packing.

PAPER STOCK—With box board mills slow buyers and with other consumers purchasing in a reserved way, there has been a lack of important activity in the waste paper market in New York this week. Prices in some cases have eased off a little but no broad changes have developed. Hard white shavings of No. 1 quality have sold at 4.15 cents a pound f.o.b. New York, soft white shavings at 3.15 to 3.20 cents, and ledger stock at 3 cents. Old magazines are bringing 2 cents a pound or a trifle less at dealers' shipping points, while old No. 1 kraft paper is a firm item at 2.25 cents a pound f.o.b. New York. Folded newspapers are down to about 1.10 cents a pound New York, and No. 1 mixed paper is selling at 80 to 85 cents a hundred pounds f.o.b. this city.

OLD ROPE AND BAGGING—Old manila rope is stiffening in price under a livelier demand from paper mills and what seems to be a limited supply in dealers' hands. No. 1 domestic manila rope is generally quoted at 5.50 to 5.75 cents a pound f.o.b. New York, and foreign rope of good quality is held by importers at 5.50 cents ex dock at this port. There is little doing in old bagging. Prices are nominally around 1.20 cents a pound New York for No. 1 scrap bagging, and 90 cents a hundred pounds for roofing bagging.

Accidents do not happen, they are caused. Examples: Two men breaking slag were hit in the eyes by flying particles. Cause: Failure to wear goggles. A man slipped on stairway and fell to the floor below. Cause: Failure to grip hand rail when starting to descend. Think Safety, Look and Act Safely.

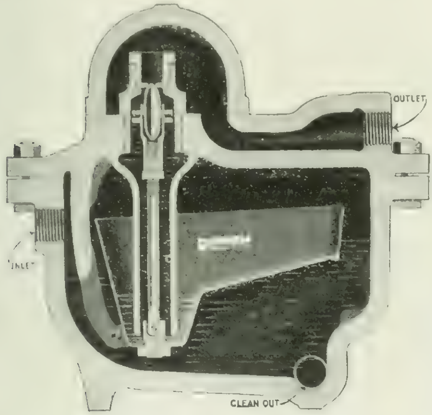
Industrial Items

A NEW BUCKET TRAP

The DUNHAM Type No. 80 Bucket Trap for High Pressure service manufactured by the C. A. Dunham Co. Limited, Davenport Road, Toronto, has recently been placed on the market. This company specializes in the manufacture of heating and power Plant specialties and produces a line of Steam Traps to meet a very wide range of uses. The use of Dunham equipment is mentioned in the descriptive article on the Espanola school houses, elsewhere in this issue.

The manufacturers claim that a new and distinctive feature is incorporated in this new bucket trap—namely, a quick, snappy closing action.

It is quite fully appreciated that bucket traps, generally, are slow, or "draggy" in their closing action, and this condition causes more or less wire drawing, and cutting of valves and seats, with incidental maintenance expense, and loss of steam.



The No. 80 Trap

The DUNHAM Bucket Trap operates on the same principle as other bucket Traps, but the destructive effect of steam wire-drawing the seat is reduced to a minimum by the quick closing accomplished through the shape of the DUNHAM bucket. The proportion and shape o f the bucket is such that when it begins to rise, all water inside the Bucket is shifted towards the hinge, filling the water seal, and the movement of the bucket upwards is accelerated, which produces the **Quick, Positive, Forceful** action, and reduces the wear on the valve and seat.

The No. 8 DUNHAM Blast Trap is equipped with thermostatic disc valve auxiliary float operated valve, to handle large volumes of condensate and automatically liberate all non-condensable gases. **It is designed for use on pressures of 10 lbs. gauge or less.**

The effectiveness of a heater for use with a fan, or of a coil in dry kilns, or of the paper machine dryers depends on how free the heater is from air and other non-condensable gases. This efficient thermostatic trap applied at the return end of the heater or dryer insures the full heating effect from the surface because the

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ORVAR HYLIN, Vice President
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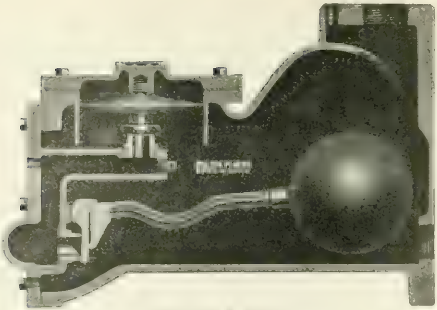

The No. 8 Trap

steam temperature is not used up in overcoming the resistance of the gaseous film.

This particular trap is used extensively in industries where drying and heating processes are required. As air or non-condensable gases pass from the heating fixture into the trap, the lower temperature of such gases causes the thermostatic disc to lift the valve sufficient to discharge the gases automatically and continuously.

It is possible to use exhaust or live steam at lower pressures and secure better heating and drying results where the non-condensable gases are continuously and automatically eliminated.

The C. A. Dunham Co. Limited, Davenport Road, Toronto, have recently issued a Bulletin on this line, which completely describes the product, which will be sent to any Engineer interested.

BRISTOL TACHOMETERS; RECORDING AND INDICATING

The Bristol Company, Waterbury, Conn., U. S. A. manufacturers of recording instruments, whose Canadian distributers for the Eastern territory are Powerlite Devices Limited, Toronto and Montreal, and Gorman Limited, Edmonton, for the Western territory, have just published a new thirty-two page bulletin on Bristol Tachometers, Recording and Indicating. This is now ready for distribution and a copy will be sent to any reader of *Pulp and Paper Magazine of Canada*.

To know the speed of engines, shafting and individual machines is essential in order to maintain the maximum plant operating conditions. Not only to have occasional readings, but a continuous record showing comparisons and fluctuations from hour to hour. For these reasons Bristol's Tachometers have been developed and are now being extensively used in the pulp and paper industry.

The Bristol's Tachometers, to which this bulletin is devoted, include both recording and indicating models for permanent installation. The recording tachometer provides reliable measurement and complete record of speed, which is automatically traced on a paper chart. These records show actual speeds as they take place together with time of occurrence, and are valuable for both engineering data and production studies. Two types of tachometer equipment are described in this bulletin; the Pneumatic and the Electric. Both methods have well defined functions and should be chosen only after careful consideration of the application in hand. Flexible connections of lengths suitable for requirements are used between the instrument and the transmitting mechanism. This allows the instrument to be mounted on the wall or switchboard where it may be observed by the attendant at a convenient distance from the revolving parts.

The Pneumatic Instruments are made only in the recording models, with round charts either 12-inches or 8-inches in diameter, and the records traced by ink method.

The Electric Tachometers are furnished in an indicating model—a round chart model for 8-inch charts only, and using the smoked chart recording system—and a strip chart type recording instrument. These, with the pneumatic type provide a very complete line of tachometer equipment adaptable for almost any kind of application ever encountered in the industries.

Bristol's Tachometers, both indicating and recording, can be used anywhere it is desired to know the speed or revolution of revolving shafting or machinery.

It is a simple matter to install any Bristol's tachometer equipment. The records and indications are direct reading, therefore no additional calculation or tables are necessary to interpret them.

CHARLES WALMSLEY & CO. (CANADA) LIMITED COMPLETE RECONSTRUCTION OF PLANT

The first Annual Meeting of the Shareholders of Charles Walmsley & Co. (Canada) Limited took place on the 8th. inst. The President, Sir William Price, reported that the reconstruction of the Company's Plant, at Longueil, is now practically complete. Manufacture on a large scale is commencing at once and it is anticipated that in a short time, upwards of four hundred men will be employed on the production of Walmsley Paper Machines and the subsidiary equipment required by pulp and paper mills. The iron foundry has now been in operation for some weeks and the quality of the castings produced is entirely satisfactory.

Mr. William Adamson was appointed a Director of the Company. He is well known to paper Manufacturers in this Country as the Technical Director of Charles Walmsley & Co. Ltd, England, and the Canadian Company expects to benefit considerably by his advice and by the increased co-operation between the English and Canadian Works which his Directorship of both will ensure.

Another name added to the Board of the Company is that of Mr. Daniel H. Haigh, the Secretary and Treasurer, who will continue to hold those offices in addition to his Directorship. Mr. Haigh, an English Chartered Accountant, has been for a number of years associated with Sir W. G. Armstrong Whitworth & Co. Ltd., who are the principal shareholders in Charles Walmsley & Co. (Canada, Ltd., and who transferred Mr. Haigh's services to the Canadian Branch on its reorganization.

The Company has been fortunate in securing the services of Mr. J. W. McCammon as its Sales Manager. Mr. McCammon is well known in Montreal, having graduated as an engineer at McGill University in 1912. He was conducted for two years with Messrs. MacKenzie Mann & Co. in the construction of the Mount Royal Tunnel and for the past ten years has been associated with the Canadian Fairbank Morse Co.

Mr. Harry Kay, Vice-President and General Manager, anticipates that the Plant will be in full operation at an early date and will thus enable Canadian Paper & Pulp Manufacturers to obtain all the equipment required without having to purchase outside the Dominion.

Pulp and Paper Magazine
OF CANADA

A Weekly Magazine Devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades

VOL. XXI. GARDENVALE, Que., October 25, 1923 No. 43

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The editor cordially invites readers to submit articles of practical interest which, on publication, will be paid for.

Subscription to any address in Canada, United States and British Empire, $5.00 yearly. Other Countries, postage extra. Single copies, 15 cents.

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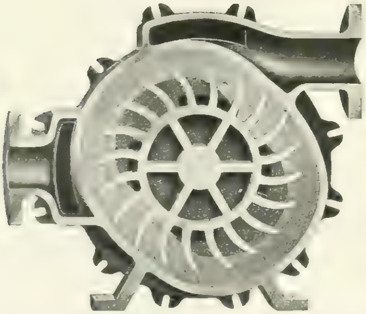

Real reasons for installing Nash Pumps.

They are unusually simple and reliable because they have only one moving part, and since there are no rods, pistons, crank shafts, gears or loose moving parts to get out of order, they do not require expert attendance. The vacuum is produced absolutely without pulsation and the freedom from vibration enables Nash Pumps to give the utmost dependability of service for the longest time.

Our nearest Branch House will gladly send you interesting pump information and explain, in detail, why Nash Pumps are so desirable.

The Canadian FAIRBANKS-MORSE Company, Limited

St. John Quebec Montreal Ottawa Toronto Windsor
Winnipeg Regina Calgary Vancouver Victoria

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:-: EDITORIAL :-:

AN IDEA FOR CHRISTMAS

We find a few greeting cards for Christmas already being distributed for sale. The box board business is said to be picking up on account of the anticipated needs for materials for the Christmas trade, and other indications point to the approach of the happy gift-giving season. In this connection, we note also a movement on foot among the merchants of one of the large American cities for the correct spelling of the word "Christmas". This Merchants' Association decries the use of the abbreviation "Xmas," and we hope the idea will take hold in Canada as well, and spread rapidly and far. The "X" in Christmas stands for the cross rather than the Christ, and at this Christmas season we want to think particularly of the Master as a child who came to bring peace and goodwill to men, and to be thankful for the love and service which typified his life, not forgetting, of course, the great sacrifice and its message of forgiveness. But Christmas is essentially a season of joy, and the happier we can make it, the better we shall please the Master.

In millions of homes, one of the features of the Christmas time, and of the decoration of the house, is a Christmas tree. This is usually a spruce or balsam that may be anywhere from 5 to 15 years old, or, in the case of a large celebration, the tree may be 50 to 70 years old. We even find cases where large trees are cut and left, merely to remove a beautiful top. We venture to say that the use of the Christmas tree is a matter of decoration and custom, more than one of utility or necessity. We are fully aware of the beauty of a Christmas tree loaded with gifts, decorations and lighted with tiny candles, but we are also aware of many a disastrous fire with unredeemable loss of life which makes adherence to this custom neither a worship of the Master, nor a tribute to our common sense. The use of the electric light has brought in a safety feature which makes it possible to have a Christmas tree, and have it nicely decorated and illuminated without the danger of fire, but there is probably not one family in a hundred which can afford or would think of making use of this device.

There is another effect of the use of the Christmas trees as they are now provided, which is not sufficiently impressed upon the mind of the public. We refer to the slaughter of young trees in a self-reproducing forest that should be allowed to grow to be used for the purpose of giving employment to the men who buy the Christmas presents. Trees mean jobs, but there are a great many people who do not realize this, or who, though they may realize it, are not willing to readjust their customs in favor of those whose jobs are jeopardized by this unnecessary waste of growing materials. Our soft woods are becoming entirely too scarce and too valuable as a basis for employment to permit further needless exploitation.

Two ways have been proposed for retaining the decorative feature of the Christmas tree, and at the same time conserving our forests. In one of these Mr. George Carruthers who takes a very keen interest in the problem of raw material for our pulp and paper mills, has introduced the idea of a decorative screen or panel made by mounting on a suitable back ground of tissue paper a Christmas tree likewise constructed of colored tissue paper. We have not seen one of these screens, but we understand that they are very attractive, and where there are older children in the family, the making of the screen will furnish many hours of interesting and entertaining work.

The author of the other idea is, so far as we know, still anonymous, but he certainly deserves credit for the suggestion that those who insist on having a real Christmas tree should buy a small tree from a nursery, plant it in a box and leave it out doors until Christmas time. It can be brought in for the holidays, and serve its purpose as a decoration, and then the bottom can be removed from the box, and the tree, with its roots, placed in a hole that has already been prepared for it, so that it will be ready to grow when spring comes. It will be necessary, of course, when the ground is soft in the spring, to pack the soil properly around the roots of the tree. In this way, several good ends are served. The trees growing in the forest or the wood lots are left to mature, and another tree is planted. A hedge or a clump of fir or spruce trees is not only a pleasing addition to any property, but a feature which adds materially to its value.

With groundwood pulp selling at $50, and no surplus production, but rather a serious deficiency, we see no chance of a softening in the newsprint situation. But we do not anticipate an increase in price during the first half of 1924.

WELFARE WORK IN FACTORIES

Elsewhere in this issue we reprint an article on the above subject by Mr. Maxwell Droke which appears in the current issue of "Industrial Management." The article is entitled, "Shall We Say Farewell to 'Welfare'?" and it emphasizes the fact that, although welfare departments in industrial concerns are not as highly regarded as they were in time of war, there was, nevertheless, a sound and valuable idea underlying what is known as "welfare work." That view is one of the truth of which we ourselves are fully convinced.

At the same time, we are very conscious that there has been a good deal amiss with the semi-paternalistic scheme of things compendiously known as "welfare work in factories." We would not go the whole way with Mr. Droke in his emphatic assertion that "nine out of every ten welfare departments, as they are now organized and maintained, are rank failures." But we are firmly persuaded that far too large a proportion of them are not within measurable distance of being as serviceable as they ought to be. Nor are the reasons for this far to seek.

For one thing, in a good many factories these enterprises owed their origin to purely selfish motives on the part of the employers. As Mr. Droke puts it, someone in the organization had an idea that he could "kid" workmen into speeding up production, and thus profit materially by this artificial stimulation. Those who started welfare work for this reason must have found themselves, for the most part, woefully disappointed, except, perhaps, just at the very outset. For we are quite certain that welfare work, even when conducted on a plane distinctly above the average, is not adequately appreciated by employees in the mass, and not appreciated at all by quite a large percentage of them.

Again, welfare departments in many factories have been launched as the result of a yearning on the part of some well-meaning, but impracticable, idealist to "uplift" the workers. Such an enterprise has usually proceeded along wholly wrong lines. There has been too much sentimentalism and molly-coddling. Welfare work has become welfare waste. The well-meant philanthropy, in operation, so far from increasing either the loyalty or the efficiency of the workers, has often been carried on in the face of passive, but none the less determined, hostility on the part of those designed to be benefited by it.

But for the right kind of development work — we agree with Mr. Droke in his dislike of the word "welfare" in this connection — we are fully persuaded that there is a proper and, indeed, a necessary, place in our manufacturing establishments. Mr Droke, in his article, gives a very good idea of the sort of development work which seems to us to be worth while especially in its inculcation of the one-big-family spirit. He lays considerable — but, as we think, not excessive — stress on the importance of recreational development, but he also rightly insists on what should be done in the way of mental development.

In this regard we share his views to the full. Speaking from personal knowledge, we are convinced that, when the idea of personal advancement, through the medium of technical education, is properly put before the rank and file of workers, it secures and maintains their hearty acceptance. We agree with Mr. Droke that the ideal is for each workman to enroll for a practical correspondence course, along the line in which he wishes to further himself, and carry on his studies with the help and inspiration of the Development department. "If a sufficient number of men should enroll for the sane course, a class could be formed and a definite study period allotted. The lessons from the correspondence school would then be used as text-books. Under this system, the "moral support" and intelligent interest of the development man would literally work wonders among the men. With proper, systematic application there would be very few stragglers to fall by the wayside and the company would be assured of an ample supply of trained workers."

THIS SHOULD NOT BE

The St. Catharines Standard draws attention to the fact that a big pulp and paper mill, costing $3,000,000, is to be erected at Tonawanda, N. Y.

When that mill is finished it will be fed by raw material cut in Canada and sent over there.

We permit that pulpwood to keep on going over, and encourage the building of a $3,000,000 mill just as close to the Canadian border as it can get.

We are the cutters of wood and United States is the manufacturer of paper.

We are stripping our pulpwood areas to build up great plants in other countries.—From London, Ont., *Advertiser*

TRADE WITHIN EMPIRE

Canadian Exports Increased $100,000,000 in 12 Months

Canada's trade within the Empire is increasing. For the twelve months ended July, Canada exported to other parts of the Empire goods amounting to $453,437,899. This is in comparison with $354,992,074, the figure for the corresponding twelve months previous. Imports from British Empire countries during the two twelve months' periods were: Ended July, 1923, $195,811,190; ended July, 1922, $153,185,581.

During the twelve months ended July, the United States was Canada's best customer, taking Canadian goods to the value of $402,156,905. The United Kingdom came next, purchasing Canadian products valued at $386,061,673. During the same period, Canada bought from the United States to the amount of $795,414,601, and from the United Kingdom to the value of $153,002,578.

Canadian Paper Trade Convention

The Canadian Paper Trade Association is one of those important organizations that goes ahead and gets things done without making a noise about it! Their sixth Annual Convention was held in Montreal last Monday, Tuesday and Wednesday, at the Windsor Hotel, and was well attended by merchants and jobbers from as far as Vancouver on the West and St. John on the East

The reports of officers and committees show that progress is made by organized, co-operative effort, and the address of President Wilson shows that this Association is working for the betterment of the Paper Trade in Canada, not merely in meeting the difficulties of the moment, but by anticipating the problems of the future and laying the foundation for continued success and for more and more harmonious relations throughout the business of manufacturing and distributing paper.

One of the great problems of our time is the standardization of papers so as to eliminate waste — waste of stock in manufacturing, waste of space in storage, waste of stock in over-runs and change of style, and waste of money in carrying an unnecessary assortment of odd sizes, weights and colors. These freaks and frills add to the cost of making and selling, without any commensurate profit — in fact, we believe such oddities are frequently a source of loss. We are glad to see the Canadian Paper Trade Association getting behind this important movement.

President Wilson, in his address, mentions the work of the Mills Relation Committee. The contact of manufacturer and distributer, is, of course, intimate and must be agreeable and harmonious to be sound and successful. That, we believe, is the situation, and this committee is evidently performing its function of showing and improving the solidarity of the whole industry, from raw material to consumer.

Sectional reports indicate confidence in the future while counseling caution with regard to commitments. It is encouraging to note the successful issue of improvements in trade practices put into effect.

The Pulp and Paper Magazine congratulates the Association for the enormous amount of excellent work that has been done, and which the whole industry will appreciate.

PRESIDENT'S ADDRESS

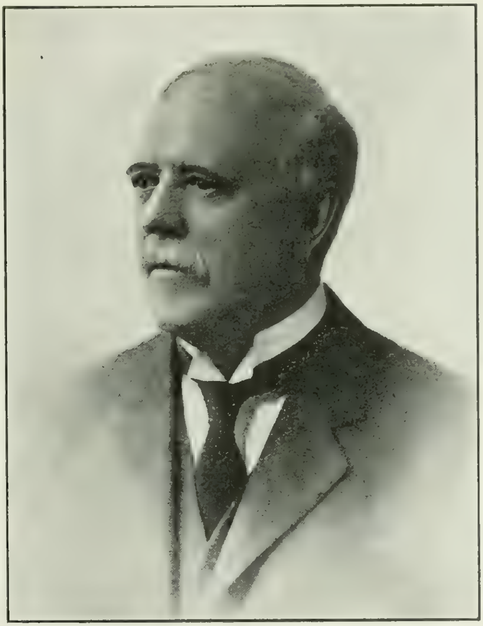
By GEORGE WILSON, Clark Bros. & Co., Limited, Winnipeg

It affords me great pleasure to extend to you a hearty welcome to the Sixth Annual Meeting of the Canadian Paper Trade Association.

I hope that our deliberations may be productive of genuine benefits to the Trade; I also hope that all discussions will be carried on in the frankest manner possible.

We are gathered here from a widely scattered field, representing many divergent problems. There is much work ahead of us, therefore, let us select first those problems which are most important and common to the greatest number of the members.

The aims of this Association are based on a mutual benefit plan, so let us for the time being forget our competitive activities and work together along lines of pure democracy, and co-operate with each other to establish equality of opportunity to all and special preference to none.



JOHN F. ELLIS
Hon. President Canadian Paper Trade Association

Heretofore we have to a large extent been opportunists in our activities, working on problems of the moment, some of them urgent enough, but we are growing older and it behooves us to broaden out and take a more comprehensive survey of our position and possibilities, and lay down broad and definite policies on which to build our Association, and accentuate our correct functioning as Paper Jobbers and Distributers. We may not get everything we ask for at once, but we will, at least, be striving with some continuity of effort to secure the big things we have set up as our goal. Once the big questions are settled the smaller ones will quickly settle themselves. We are, I am firmly convinced, gaining with every year more confidence in each other's sincerity and acquiring a more unanimous opinion, and we are gathering strength of purpose; these with persistent courage are bound to make headway in the solution of our problems.

The successful functioning of an association like ours depends absolutely upon how seriously each member assumes his responsibility — each member is a link, — and what each of you, as individuals, do, and how each of you values your business probity — raises or lowers the general moral tone of the Association at large. All rules, regulations and motions are worthless without your honest, hearty, conscientious support. At all times toe the line of correct ethics. No member can sidestep his responsibility to the other members without endangering the whole fabric of our institution. We are bound together by a common interest, and by united effort only can we ever hope to make material progress.

As we grow older our vision clarifies, and we see more clearly the essential moves in the game of business — the rights of Jobber, Manufacturer and Customer; and we must needs make our demands reasonable and equitable. — If we expect fair play, we must play fair.

Established Customs are hard to change. Some mills have been compelled to act as jobbers to introduce their lines when most of the paper marketed was imported — and the difficulty of getting the mills to agree on a united policy is great. I trust this important question will receive your best thought and consideration. Of all the troubles of the paper jobber, the one which causes him most anguish of mind is the direct selling by the mills. Your Mills Relation Committee have been active on this for some three years, but without making much progress. Last meeting, however, we really impressed the mills with the vital importance of the question, and at our July special meeting in Montreal, which Mr. John Martin and I attended, distinct progress was made and the mills met us in a very sympathetic attitude. It must be remembered that some of the mills have been protecting the jobber consistently, and it is only logical that we should agree to support more strongly these mills.

Our friends to the South are always pretty well to the front in meeting new conditions; and some two years ago as one of the avenues of relief, they started a campaign in a serious way on a general standardization of papers. A Committee composed of Paper Manufacturers, Paper Jobbers, Catalogue and Magazine Printers, and Advertising Clubs was appointed to work in conjunction with the Federal Government. A good deal of money has been spent and a very exhaustive survey has been made. Conclusions were arrived at and recommendations made on Book Paper, which are now being considered by the Mills. This is to be followed by standardization of Bonds, Bristols, etc., etc. And I hope when the time comes, that this Association will endorse the various recommendations. Standardization could be easily carried out in Canada, and we should prepare the way at once by appointing a joint Committee from Mills and Jobbers to make recommendations at an early date.

Now, Gentlemen, I have roughly outlined the subjects which are occupying our attention at the present time, and on which you will deliberate during the next two days. We have accomplished more during the last year than in any previous year, and this is largely due to the persistent efforts of the gentlemen who have been associated with me on the Board, and I take this opportunity, on my own and your behalf, of thanking them for their services for the past year.

I think that the next twelve months will, in all probability, be the most important period of our existence — perhaps the crucial period when we either step forward or dissolve, which heaven forbid; and as a closing word I would very strongly, earnestly urge every member to support the Association and its officers in every move they make for the betterment of the trade. Back them up and help them to step forward in 1924. Sink your little personal gains and help the Association to get the big things for all. The Mills stand ready to help us, but first we must play the game and be true to each other. Only by united, honest, conscientious loyalty can we hope to accomplish progress.

I thank you especially for the great honor you did me in placing me in the chair as Chief Executive, and I can say sincerely that I am glad I have been permitted to assist in the solution of some of our problems. It is an honor and a privilege which any man may be proud of. It is always a satisfaction to know that your individual contribution has helped ever so little in improving conditions of life, and establishing business on a saner and sounder plan, and that you have played your part and taken your share of the work.

REPORTS FROM SECTIONS

Maritime Section

By E. A. Schofield, Schofield Paper Co., Ltd., St. John N. B.

So far as the East is concerned, the year which has passed, since we last met, has on the whole been fairly prosperous in the paper trade.

The orders have been small but the total volume has steadily increased, and, in my opinion, is more healthy for that reason, as the various printing offices are not overloading.

Some changes have taken place. The Maritime Paper Company, formerly located at Moncton, have closed their stock out at that point and discontinued business.

The Schofield Paper Company, Limited, have opened a warehouse at Halifax, stocking printers' papers in general. They will be glad to welcome any of you at any time you may be at that point.

Up till this year collections had been coming along fairly well, but throughout this year conditions are becoming more stringent, owing considerably, I believe, to the fact that last winter we had a most serious condition develop through the tremendous amount of snow, and storms were more or less disastrous to the fishing, and the effect consequently is now finding its way around to the general trade in the shortage of collections; however, if the dealers will confine themselves to buying only their requirements, I am of the opinion the trade will finally pull around all right.

Before closing, I would like to bring to the notice of this Association the Act passed at the last session of the Federal House, providing for a preference on goods imported to Canada, via Canadian ports, and while in our immediate requirements, there is no occasion for many importations, yet the influence of every member may be used in this connection, which will mean much to Quebec, Montreal, St John, Halifax, and Vancouver, and their development means the development of other parts of Canada, so that finally Canada can increase her present proud position of one of the great nations of the world.

In St John, N.B., on the 29th of this month, is to be opened the largest dry dock in the world, to which is to be added a ship repair plant, with magnificent machine shops and necessary equipment. This is to be followed by further port development, which means that this port which can be used the year around, will be one of the ports available for Canadian imports and exports at all seasons.

Use your influence to see that Canadian imports and exports are sent through Canadian Ports.

Montreal Section

By T Havill, T. Havill Paper Co., Montreal, Que.

From the Montreal Section there is little to report since most of our deliberations have been on matters on which the Mills Relation Committee will report.

The Trade Customs of our Association have been lived up to fairly well in Montreal since our last Annual Meeting, and it seems as though we are all learning to appreciate the Association more and more.

Business, generally speaking, has not been any too brisk during the last year, but in this regard we are optimistic and look for a better year ahead.

The Montreal members are desirous of having time granted them for the discussion of the advisability of continuing to sell ton lots of Bonds, assorted, at the ton price, or if this is to continue, the question of a differential discount between tons of one watermark and tons assorted. Also, we wish to take up the matter of appointing a local Secretary.

Our general Secretary has not been able, apparently, to visit us in Montreal during the year just past, and as there are matters continually cropping up which require much attention and follow up, we feel that the only way in which Montreal's problems can be satisfactorily solved, is by the appointing of a local secretary.

Another question we would like fully discussed is the classification of grades. This is a most important matter and if hard and fast customs can be adopted in this matter we shall all feel much happier from the selling point of view.

I would be out of order if I started a discussion of these matters at the present time, but I shall be thankful if you will allow ample time later in the program for a full discussion of the points.

Ontario Section

By R. I. Finlay, United Paper Mills, Ltd., Toronto, Ont.

The Ontario Section is once more 100 per cent. complete in the matter of membership.

During the year we have been very pleased to welcome the Buntin, Reid Company, Limited, under its change of ownership, to the ranks of our members. We have added also the London Paper Company, Limited to the list of members.

During the year one of our members, the Fred. W. Halls Paper Company, Limited, have been extending their activities and have opened a branch selling office and warehouse in London.

The Long List, which was arranged last fall, has been operating fairly successfully, and has been renewed for another year. It has not brought results to the Jobbers which had been anticipated, but it appears to be of advantage to a good many of our customers, although they (the customers) are not entirely unanimous in this regard.

Last January we formed the Accountants' Committee, holding monthly meetings at the Secretary's office, for the purpose of exchanging credit information. This has proved a useful source of information to our members, and will, I think, help us to avoid some of our yearly losses through bad accounts.

In closing my brief report, I wish to state that an improved spirit of harmony has prevailed among us during the year — as one of our members puts it, we are 99.46 per cent. pure.

Prairie Section

By A. C. Hunt, John Martin Paper Co., Ltd., Winnipeg, Man.

A very hearty spirit of co-operation, good-will, and good fellowship exists in the Prairie Section.

Meetings are held more or less regularly when the occasion demands, and we always have frank and hearty discussions on the questions concerned.

As is practically true of the interests of all members, business has not been as good with us during the past year as during the previous one.

Most members have succeeded in maintaining their collections. Some firms have even succeeded in collecting more than went through their books during the year.

The 25 per cent. breakage charge was put into effect during the past year, and it has been maintained by all. The Typothetae and printers at first objected, but it was imposed and held to by our members. Breakage on orders has been generally reduced, and the printers now seem to be satisfied.

A more or less serious question has developed in our territory through some firms attempting to go into the paper jobbing business who cannot qualify for membership in our Association. We do hope that this question will be given every consideration by our Mills Relation Committee, and that efforts may be well rewarded in this respect.

British Columbia Section

By Fred Smith, Smith Davidson & Wright, Ltd., Vancouver, B. C.

Greetings from the British Columbia Section, and may I express our pleasure at the work done with the mills and other things.

The Association in British Columbia is working very well, and as an Association we are giving much attention to the cost of doing business. During my trip down to the East, I discussed this question with the Western members and I find that generally overhead is growing steadily.

We strongly recommend that the Association, as a body, should go into the question of classification of grades. We would like also to see the trade customs standardized throughout the country.

The British Columbia Section is selling on strictly net terms, and have found that collections are received just as promptly as when discount was offered. We would recommend to the other sections that they also adopt the net terms.

British Columbia has never adopted the Long Price List, and are very pleased that they did not do so. We do not want it.

We would suggest that our Mills Relation Committee recommend to the Mills that they pack all ledger papers in ½ ream bundles regardless of the grade.

Treasurer's Report

By E. S. Munroe, Wilson-Munroe Co., Ltd., Toronto, Ont.

Our records show that we are now in a stronger position than ever before since the time of our organization.

During the past year we made a change in the method of assessing our membership, and have found it to be very equitable and fair.

I would recommend that the question of arranging assessments for next year be left to our new executive.

General Secretary's Report

By N. L. Martin, C. A., Toronto, Ont.

During the past year there have been some changes in our membership. We welcome to our membership the Buntin, Reid Company, Limited of Toronto, and the London Paper Company, Limited of London.

There have been many sectional meetings during the year, without which it would have been impossible to have preserved the large measure of successful operation that has prevailed.

On June 27th a conference was held in Toronto between the Quebec and Ontario members, when we had the pleasure also of having Mr. John Martin of Winnipeg sit in on the discussions. The day was spent in an open air meeting at the Yacht Club, and the occasion was a very enjoyable and profitable one. I think all those present on that occasion will vote for more of them.

On July 5th and September 20th, the Mills Relation Committee met the Mills in friendly discussions. The most important of the many matters discussed was the settlement of the book paper situation in a manner which is, at least, a start toward much better conditions.

In June your Secretary attended a conference in Ottawa on the question of the Sales Tax, the new rulings which become effective in January next being reported to the members. I also attended a convocation of the Canadian Tax Conference, when strong resolutions were adopted which, no doubt, are reflected in the new legislation. Credit must be given to Mr. C. W. Graham, of Buntin, Gillies & Company, Limited, for his active interest in this subject. It looks as though the new regulations have to some extent followed his suggestions and removed some of the objections to which he has referred.

The work of the Ontario Section has broadened out in the formation of the Accountants' Committee, which has held eight monthly meetings at which consolidated lists of past due accounts have been distributed and discussed 150 credit enquiries have been handled by the bureau during the year.

Altogether it has been a busy and satisfactory year in this Association of the Wholesalers of Canada's premier industry. I would like to refer to the able assistance rendered by Mr. Ivan Moffitt, whose handling of the detail work has been more than satisfactory. In the short time he has been acting as Assistant Secretary, he has acquired a surprisingly good knowledge of Association work and of paper trade conditions. To the President, Treasurer and other officers, I am indebted for their never failing courtesy and kindness.

Report of the Mills Relation Committee

By C. H. McFarlane, McFarlane Son & Hodgson, Ltd., Montreal, Que., chairman.

During the past year your Committee has been in communication from time to time by letter with the Book and Writing Section of the Canadian Pulp and Paper Association, dealing with various subjects of interest to both Associations.

On July 5th a conference was held in Montreal with the Fine Paper Section and also Coated Paper Section. A full report was furnished to each member of our Association.

On September 20th a meeting between your Committee and the Fine Paper Section was held in Toronto, of which a full report is in your hands. We consider the results obtained at this meeting were very satisfactory.

On October 15th your Committee met a Committee representing the Book and Writing Section of the Canadian Pulp and Paper Association at their offices, and placed before them some of the difficulties under which the Dealers were carrying on business, due to, what we considered, abuses which had crept into the trade.

We also discussed one or two points in the method of packing goods.

The Manufacturers' representatives promised to give our representations careful consideration. A full and detailed report of this meeting will be placed in the hands of your members as soon as is possible.

I wish to take this opportunity to express my appreciation of the assistance that I have received from the members of my Committe, Messrs. Dickenson, Graham and Havill, and also to thank the gentlemen—Messrs. Finlay, Larkin, Little and Martin, who were associated with the Committee for special work. All of them spared no effort or time in working for the benefit of the Association.

BUSINESS DISCUSSED AND DECIDED DURING CONFERENCE, OCTOBER 16th AND 17th.

DEFINITION OF A FINE PAPER JOBBER

The Association adopted the following definition of a Fine Paper Jobber to replace the definition at present incorporated in the by-laws of the Association.

> A Fine Paper Jobber or Dealer is defined as follows: A Corporation, Firm or Individual, whose principal business is selling for re-sale or processing, and carrying a general stock of the various grades of stock sizes and weights of Fine Papers, Cardboards, Envelopes, etc., from which any quantity, large or small, can and will be sold.

A Committee was appointed to go into the question of arriving at uniform selling terms which would be satisfactory to members in all parts of the Dominion. Their report was submitted to the meeting and adopted, to be put in force January 1st, 1924.

> Terms will be net — 30 days from 1st. of month following the month of purchase.
>
> Cash discount of 2 per cent. will be allowed if payment is received by the vendor not later than the 20th of the month following that of purchases.
>
> Interest at the rate of 8 per cent. per annum will be charged on overdue accounts.

A committee consisting of two members and the Secretry was appointed to prepare a complete list of trade customs. These will be submitted to each section of the Association to be ratified, after which printed lists will be distributed to the entire membership.

A committee of four members was appointed to go into the question of classification of grades. This committee will make an exhaustive study of the question and will be supported by each Section of the Association supplying them with all data in regard to cost of doing business, etc.

The above committee together with the Mills Relation Committee will take up the question of "Standardization". They will follow the work done by the American paper men in this regard, and will take up the question with our own mills.

Very many other important matters were discussed, and will be followed up by further discussion and in time made effective.

OFFICERS, 1923-1924

Honorary President, John F. Ellis, Barber-Ellis, Limited, Toronto, Ont.

President, J. B. Larkin, Federal Paper Co., Limited Montreal, Que.

1st. Vice-President, R. L. Finlay, United Paper Mills, Limited, Toronto, Ont.

2nd Vice-President, E. A. Schofield, Schofield Paper Co., Limited, St. John, N.B.

Treasurer, E. S. Munroe, Wilson-Munroe Co., Limited, Toronto, Ont.

General Secretary, N. L. Martin, c.a., 73 King St., West, Toronto, Ont.

Mills Relation Committee:
C. H. McFarlane, Chairman.
T. Havill,
W. Dickenson,
C. W. Graham.

SOCIAL FUNCTIONS

One of the most enjoyable, and not the least valuable, features of the annual convention of the Paper Trade Association is the opportunity to meet as friends, to renew old acquaintances and to make new ones. This was facilitated during the meeting last week by the holding of luncheons on Tuesday and Wednesday and a dinner on Tuesday evening. At the dinner, when the toast to the King had been honored, the guests of the Montreal Section were toasted by Mr. McFarlane and replied to by Mr. Munroe and Mr. Howard Smith, who said he believed in the necessity of the jobber as the most economical medium for the distribution of paper. Mr. Havill proposed the toast to the Manufacturers and Mr. Fred Campbell replied. Mr. Wilson spoke for the Paper Trade Association and Mr. Stephenson, of the Pulp and Paper Magazine, explained the manner in which the Paper and Pulp Industry of Canada will participate in the British Empire Exhibition next summer.

On Monday, Mr. McFarlane entertained the Mills Relation Committee to lunch at the St. James Club, and on Wednesday, Mr. Peter Rolland, entertained several members to dinner at the Engineers Club.

F. O. B.

"I bought and paid for two dozen glass decanters that were advertised at $6 a dozen f. o. b. and when they were delivered they were empty." said the client.

"Well, what did you expect?" asked the renowned lawyer.

"Full of booze. What else does f. o. b. mean?"

MR. C. W. GRAHAM
Membre Mills Relation Committee, Canadian Paper Trade Association

AUSTRALIANS WANT B. C. PAPER

A Vancouver despatch to the *Financial Times*, Montreal, gives an interesting view of the newsprint situation in British Columbia. It reads:

In spite of the Australian perference granted to British newsprint mills which has resulted in a probable loss of 50,000 tons of paper business to British Columbia pulp and paper mills since the beginning of 1923, both the Powell River Pulp & Paper Company and the Ocean Falls Pulp & Paper Company are experiencing a good year. The shutting off of the Australian market has been made up by larger shipments to the United States, although there has been some loss through different sized cuttings. The daily output of the Powell River plant is 240 tons of newsprint and that of Ocean Falls 230 tons of newsprint and 30 tons of wrapping paper.

No plans are being considered at present for increasing the capacity of either plant, both of which, however, are now working fairly close to capacity. Outside of the United States there is a good market for B. C. newsprint in the Orient. The recent earthquake may affect the Japanese demand somewhat but only for a short time.

It is not considered here that there is any probability of an adjustment of the situation in regard to Australia for some time and there is no expectation of getting any Canadian newsprint into the Commonwealth before the middle of next year at the earliest.

On account of the low rate of exchange British mills are buying their pulp from the Scandinavian countries and exporting paper to Australia, securing the benefit of $15 a ton. Strong efforts are being made here to get the Canadian Government to take up the matter with Australia at the conference in Ottawa which will follow the Imperial Conference. In the meantime several Australian publishers have delayed their buying in the hope that they may be able to secure their supplies in this province at an early date.

Secular education without moral culture dwarfs the soul. Education and religion must go hand in hand to the right exercise and proper development of man.

BRITISH TRADE NEWS

(From Our London Correspondent)

October 8, 1923.

The secretary of Becker & Co., Ltd., has publicly announced in London that "in view of numerous enquiries we shall be glad if you will announce that Sir Frederick Becker's retirement from the board of Becker & Co. Ltd., is only temporary during his absence in Canada. On his return, about the beginning of December, he will resume his seat on the board." A great many people on this side of the Atlantic did not think Sir Frederick's stay in Canada was going to be so long and the letter, which is signed by Mr. William Carter, explains the position of affairs. Sir Frederick, of course, is very busy on the Canadian side and big developments are expected when he is finished.

Technologists Get Busy

The winter work has been started by the Technical Section of the Papermakers' Association, which is now one of the best auxiliaries in the paper industry The Scottish section met the other day in Edinburgh under the presidency of Capt. Nuttall, M. B. E. and some very interesting business was dealt with. During a short moment at one of the social functions Mr. W. Foster, B. A., who is secretary to the Technical Section (and to the Papermakers Association of Great Britain and Ireland), paid a high tribute to Capt. Nuttall's service on behalf of technologists and also Mr. Arthur Baker's. These are amongst the practical men of the United Kingdom and are real "live wires." in the Technical Section.

Australia Again!

The Canadian representatives have had a busy time during the past seven days at the Imperial Conference. Mr. Bruce the Australian Premier was late arriving in London so that he missed one of the tit-bits of the gathering on trading within the Empire. Mr. Bruce wants the colonies and Dominions brought into a closer union so I hope the Canadians will not lose any opportunity on the preference question which is favoring British paper to the detriment of Canadian.

At the conference of Technologists in Scotland Mr. Arthur Baker referred to the Australian preference "We have enjoyed about 2 years preferential treatment by our Australian friends. We would like our Australian friends to know that the papermakers of this country do appreciate very much the assistance given them. It has enabled them to give their people employment and keep their prices down so that even today, with all their disadvantages, production was cheap." I do not know if any of the Canadian representatives in London have seen these remarks and if they are still aware that Canadian mills are amongst the foreigners in Australia—a snub that will have to be removed.

Pulp and Paper Markets

Since my last report on pulp and paper, large shipments of groundwood, chemical wet, and unbleached chemical pulps, have arrived in the United Kingdom. The supplies of unbleached chemical dry pulp reached over 3 1-2 thousand tons. Prices for chemical pulps are slightly easier, but groundwood quotations are firm.

In the paper industry there is a more hopeful outlook on export account, particularly with newsprint. Employment, which is one of the barometers denoting progress, is reported to be good and we may assume, therefore, that trade is looking up in the paper mills.

Mr. Eric Nordberg, Hon. Secretary of British Wood Pulp Association, announces that the annual dinner will be held on October 25 Representatives of the Papermakers Association and of the Scandinavian Associations will be invited. In the good old days this used to be one of the big social events in London and all the "big guns" attended to express their opinions. Things have somewhat altered now and many of the "big guns" have faded away, I am sorry to say.

Off to Canada

The President of the British Papermakers Association of Great Britain and Ireland (Mr. C. R. Seddon) has sailed for Canada. This is the first time a President of the Association has left his chair in London and gone so far away. He is on a business trip and Mr. T. Armstead sailed by the same boat. Mr. Seddon is one of the practical papermakers and typical of the men behind the industry on this side of the Atlantic.

Big Forces Combine

Lord Beaverbrook and Lord Rothermere are announced as having assumed control of the London "Daily Sketch," Evening Standard," and other papers in the north of England formerly under the control of Sir Edward Hulton. The combination is interesting in view of the fact that Lord Beaverbrook was, and is still, running papers in opposition to Lord Rothermere's interests.

The Associate Newspapers, Ltd., have taken powers to increase their capital by the creation of a further half-million deferred shares; 250,000 of these had been issued and it is now the intention to capitalise a portion of the undivided profits. Sir Andrew Caird, managing Director of the firm, was present at the meeting, which has agreed to the new move.

COST SYSTEM FOR GLAZED PAPERS

A uniform system of cost accounting, for the manufacturers of glazed and fancy paper, has been laid out by a special committee of cost accountants representing members of the Glazed and Fancy Paper Manufacturers Association, and has now been made available to all manufacturers of these grades. The cost system, representing the combined experience of the specialists in this branch of the paper industry is not being forced upon any of the manufacturers, but is offered as a model system, both for those already maintaining cost departments, and for those who have not as yet installed up-to-date cost methods.

It is pointed out in the introduction to the method recommended that the amount of detail involved will differ greatly in meeting the requirements of the different plants, but a uniform method is urged upon the manufacturers in order to enable them to determine definitely the actual cost to figure properly the results of fluctuations in raw materials and changing labor conditions.

The association so thoroughly believes in the principle of uniform cost accounting that it has offered the assistance of its committee to manufacturers wishing to install the system recommended.

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400 TONS AT FORT WILLIAM

It has been practically decided to double the capacity of the plant of the Fort William Paper Company at Fort William. This was really determined at a recent meeting of the directors of the company held in Toronto. The present capacity of the plant is 120 tons a day of groundwood pulp and 160 tons of newsprint. The enlargement contemplated will involve an expenditure of between $2,000,000 and $4,000,000 and will increase production to about 400 tons of newsprint daily. The plant as it stands, represents an investment of about $4,000,000 and directly and indirectly gives employment to about 1,000 men.

JOY RIDING AT THE PEOPLE'S EXPENSE

From the manner in which the Act of Parliament authorizing an order-in-council that will prohibit the export of unmanufactured pulpwood is hedged about with provisions, modifications and exemption, and from a perusal of the evidence given at the hearings so far held by the Commission, it is evident that these gentlemen are joy riding about the Dominion at the expense of the tax payer, and stopping here and there to plough a barren field. There has not been a single constructive suggestion made to the Commission that has not already been brought to their attention and emphasized repeatedly in articles and editorials published in the Press throughout the length and breadth of the Dominion of Canada. The Commission will best serve the people by packing up their grip, returning to Ottawa, and sitting down with the information they have available from records of all sorts as to the necessity for conserving Canada's rapidly dwindling forest resources, and there to devise effective means for putting the future of Canada's extensive wood using industry on its feet. Logically, the first move in this matter would be to call a conference of the Premiers, the responsible Ministers and Chief Foresters of the Provinces having extensive timber lands to which would be invited representatives of wood using industries to work out an interlocking scheme which would be as uniform as possible, and which could be supported by adequate legislation, providing means of really conserving our forests, and instituting a real scientific management of them.

These ideas are covered in considerably greater detail in the following letter which is sure to be of interest to every reader of the "Pulp and Paper Magazine":

Montreal, October 17th, 1923.

Joseph Picard, Esq.,
Chairman, Royal Commission on Pulpwood,
Ottawa, Ont.

Dear Sir:—

Because of my known interest in the question of conserving Canada's fast-vanishing supply of pulpwood, some comment is being made in the public press on my abstention from the hearings of your Commission in Nova Scotia, my home province. It is being said that I was invited to appear before you and give evidence and that I failed to do so. What was the reason, is a question that is being asked.

It is true that I was advised that your Commission was to sit in Digby and in other places quite near my home and that I might have appeared had I so desired. The reasons why I neglected to do so are to be found in my belief that the appointment of your Commission was merely a political manoeuvre on the part of the Government to evade the issue; that your peregrinations about the country impose a useless expense upon the tax-payers and constitute a wanton waste of public funds, and that your findings, whatever they may be, can have no effect upon the situation, either good or bad, because the Government at Ottawa has already taken the means to render such findings abortive should you by any chance recommend the stoppage of the exportation of unmanufactured pulpwood the only means at present offering for effecting any sort of an immediate remedy for a situation which is little short of a public scandal

My distrust of the Government's bona fides in this matter, and incidentally my lack of interest in the Commission, is built upon solid ground. For upwards of three years I have devoted the greater part of my time and a large share of my means to bringing to the attention of the Government, and that of the people of Canada, the absolute necessity for restricting our exportation of unmanufactured wood if our country is not shortly to find itself in a predicament similar to that in which the Eastern States, the principal seat of the paper industry of the United States, is in as a result of its wanton and profligate use of its pulpwood forests. The evidence and the arguments which I brought to bear on the Government were so convincing, and were backed so strongly by public opinion as expressed by the newspapers and in other ways, that the Government decided to take action. It went to parliament with a bill empowering the Governor-in-Council to regulate or stop the exportation of pulpwood. After vigorous discussion this bill was passed by the House by a majority of 39, greatly in excess of that accorded to many other Government measures during the session, despite the fact that it received no open advocacy from any Ministers on the floor of the House, showing conclusively that parliament, the people's representatives, were convinced of the gravity of the situation and the necessity for immediate action. It was debated in the Senate and passed with practical unanimity and later received the Governor's sanction. During the progress of this measure the prime minister, in the presence of a member of the House pledged himself that as soon as possible after the adjournment of the House the Government would pass an order-in-council prohibiting the further exploitation of our pulpwood resources for the benefit of foreigners. He was very explicit that in his opinion it would be very much in Canada's interest to do so.

The introduction of the measure in parliament naturally attracted much attention both in Canada and the United States. The American interests who felt that it jeopardized their further draft upon Canada's raw pulpwood, took instant alarm. They appealed to Washington for "protection". They organized amongst themselves a "Committee of Defence" to defeat the proposed action and raised an enormous fund for that purpose. They got busy among the politicians of Canada and they had their emissaries in Ottawa and elsewhere pulling wires with the Ministers. There were also co-related interests in Canada equally intent and equally interested in bringing about a change of heart in the Prime Minister and his colleagues. And soon the Prime Minister and his colleagues began to "hedge."

The first sign of this came when the Prime Minister, while the Bill was up for final reading, told parliament that it was the Government's intention to exempt farmers' and settlers' woodlots from the operation of the Act. The second was his resort to the device of a "Royal Commission" — a favorite expedient for sidetracking a troublesome issue — to "investigate" the subject. (If the Government up to that time had entertained any doubts as to the wisdom of the proceeding why did it go to parliament and ask for power to stop pulpwood exports and, having obtained such power, why did it now dodge the issue?

During the pendency of the legislation authorizing the appointment of a "Royal Commission" the Prime Minister was again interviewed in regard to his intentions and he again gave assurances that his Government would very soon put an embargo on pulpwood into effect regardless of the Commission and without waiting for its findings.

His next public move, however, was to give assurances to the British Empire Forestry Conference (of all bodies!) that the Government would interfere with pulpwood exports only as a matter of last resort and if no other expedient could be found.

No sooner had the Commission been appointed than the foreign interests and their Canadian coadjutors, intent on keeping Canada's pulpwood reserves open to their unrestricted depredations, redoubled their efforts to kill any action that might even remotely threaten their interests. The result was that the Government on August 14th, 1923, passed an order-in-council (P. C. 1563) exempting for a period of ten years all wood exported under contracts bearing date prior to June 1st from the provisions of any embargo that might later be applied under the authority which the Government had itself secured from parliament. In so doing, the Government tied its own hands and the hands of your Commission, because with the farmers' woodlots already exempt, as declared by the Prime Minister in the House, and fee-hold wood "under contract" exempt by special order-in-council, there remains practically no pulpwood which an embargo, if applied, could now effect.

There is something peculiarly sinister and secretive about order-in-council P. C. 1563. At whose behest was it passed and upon what representations? Why has it never appeared in the Canada Gazette where orders-in-council affecting public matters are usually printed? Why was it given the character of a "private" order-in-council? Why have citizens who have applied to Ottawa for authenticated copies of the order been advised that they are not available for public distribution and can only be obtained if the request is sanctioned by the Prime Minister or the Minister of Finance? And, lastly, how does it come about that this order which has been carefully suppressed in Canada and which, so far as I am aware, has received no attention whatever from the daily press of this country, (for the reason, apparently, that knowledge of it has been kept from them) is printed in full in the "strictly confidential and for your personal use only" bulletins issued by the American interests who have all along exerted every effort to defeat this Canadian legislation, for the edification and, doubtless, the comfort of their members.

The Government's insincerity was further evidenced by the fact that it already had at its command all the worthwhile information on the subject in the form of official data gathered by its own agents, showing that the appointment of your commission was merely a subterfuge. I myself offered to bear the entire expense of a four months' investigation by any representatives they might name, the investigation to take place in the actual woods, if the Government would consent, and was informed by a responsible Minister that such a proceeding was unnecessary as he was already convinced that my statements of fact were correct.

Notwithstanding this millstone about its neck, your Commission, Mr. Chairman, is travelling about Canada at public expense, enquiring into conditions supposedly affecting Canada's supply of pulpwood. Appearing before you are some of the highest paid lawyers in Canada, openly and zealously representing the American interests that employ them. There are no lawyers there representing the Canadian public. So far the majority of witnesses have been hand-picked—picked by the same American interests that are employing the high priced lawyers. Their "testimony" thus far amounts no more than to an expression of personal opinion, their opinion being that their pocketbooks and those of the American interests they represent are likely to suffer if an embargo is placed on pulpwood. No real facts have yet been put before you. One witness who had the temerity to come forward, bent on presenting the Canadian side of the issue, was subjected to a merciless cross-examination by the eminent lawyers employed to protect the American interests. He was brow-beaten and made to feel that he was an unwelcome intruder.

But, apart from the manner and the matter of your hearings, is there, may I ask, the slightest excuse for going on with this investigation? What possible good can result, when the Government has already disposed of the issue for a period of ten years, — by which time, if the people of Canada are willing to let the Government's dictum stand unchallenged for that long, it will have settled itself, because our pulpwood resources will long since have become practically exhausted. Happily for the Canadian people, orders-in-council are as easily rescinded as passed.

As for the Prime Minister and the Government at Ottawa, to whom you are responsible, a time of reckoning is coming for them. The people are not so blind as not to see through such stratagems as have been resorted to. They will have no trouble in discerning the hidden hand behind the shifty changes of policy by the Government — for whom? for what? They will experience no difficulty whatever in detecting whose interests are being served in this mysterious manipulation, namely, the American paper interests.

The people of Canada are not permanently to be bamboozled by the politicians, and in declining to appear before your Commission, for the reasons I have stated, and in protesting as I do the Government's action in this whole matter, I still have the utmost confidence that the issue will be settled and settled right and that at no distant day, regardless of what the Government or its Commission may do. The people will see to that.

Yours truly,

Frank J. D. Barnjum.

It is impossible to yield to all the impulses of self in things that seem of small importance, and then one day suddenly rise to conquest when a great struggle is on. We are preparing to-day for to-morrow's victory or defeat.

Mr. Moody was telling about his work of sending religious literature to prisoners, "How many of you believe in this work?" Up went a forest of hands. "That's right. Now put them down into your pockets, quick."

Shall We Say Farewell to "Welfare"?

The Need for a New Designation and a Broader Viewpoint

By MAXWELL DROKE, in Industrial Management

One day not many months ago, I sat in the office of the General Superintendent of the largest concern of its kind in America. We were discussing problems of modern management.

"Do you know" said the General Superintendent, "We've just about decided to do away with our Welfare Department. It has cost us a lot of money in the last few years, and *we find that it doesn't pay.*"

I was not surprised. In the past seven or eight years it has been my privilege to make a thoughtful study of the Welfare Work in a wide variety of manufacturing establishments. And I have found that, almost without a single exception, a welfare department will not *"pay"* as long as there is some one snooping around with sharp eyes and an equally sharp lead pencil, to ferret out profits and loss. Singularly enough, those welfare departments yield the greatest profits where no one seems particularly concerned about profit. These are the departments that are doing the real good. I can name possibly seven of them in the country. The number should be at least seventy times seven.

Let me say emphatically, right at the outset, that *I believe* in welfare work. I know its possibilities. But, at the same time, I want to declare with equal emphasis that, in my own opinion, nine out of every ten welfare departments, as they are now organized and maintained are rank failures. Often they do more harm than good. As a rule these departments are presided over by smug, self-satisfied simpletons who couldn't command the respect, let alone the confidence, of any honest upstanding workman. This is strong talk. But it's true; every word of it. I know what I am talking about.

There are two familiar reasons for launching welfare departments. First, perhaps, some Simon Legree in the organization has a bright idea that in this way he can "kid" workmen into speeding up production, and thus profit materially by this artificial stimulation.

Another, and not uncommon reason, is that some well meaning, but impractical idealist has a great yearning to "uplift" the "poor working people."

Such individuals set about welfare work in much the same spirit that a good Christian worker goes forth to heathen lands as a soul-saving missionary.

I have been a workman. I have talked with hundreds of working men and women. And I know that these folks are not fooled one bit by the welfare department that is but a thin cloak for some ulterior motive. The workman of today sees straight, and *thinks straight*. You can't put anything like that over on him.

Nor do working people take any stock in the "uplift" welfare department. Why should they? They are independent, self-reliant American citizens who quite properly resent the so-called services so patronizingly rendered in the name of sweet charity.

And then there are a not-inconsiderable number of companies who sincerely want to help their employees. The "higher-ups"—the ranking executives—are absolutely honest in their desire. They start a welfare department with the best intentions in the world. But they err fatally in the selection of personnel for this important work. In their eager desire to secure some one who will exert a "good influence" over the employees, they too often wind up by emplying as a welfare director, a man or woman who is good—but good for nothing. There is such a thing, you know, as being "good" for the simple reason that you lack the—well, let us say moral courage to be anything else. (There is a short, ugly word that I am tempted to substitute for that term "moral courage") It is a quality which is woefully lacking in the typical welfare director of my acquaintance.

On the whole, I am inclined to feel that we can safely say farewell to "Welfare." I have never liked the word. It grates on me. I entertain a perfectly natural dislike for those persons who are unduly solicitous as to my "welfare." I know a great many working people who feel exactly the same way about the matter. And so I suggest that we eliminate the word from our lexicon. But I certainly do not mean to infer that we can afford to dispense with what, for want of a better name, we can momentarily term our development work. I believe in this work. I know that, properly conducted, it is of inestimable value to the individual and to the institution.

But what type of person is best fitted to direct this work? What are the necessary qualifications?

First of all, our director must be the sort of man (my remarks apply with equal force to women directors in their development work among women employees) to whom men naturally gravitate; a man who inspires confidence and respect and possesses the faculty of understanding. Not that he must necessarily have spent years at the workbench; but he certainly *must* be able to see and appreciate workman's problems. He must know enough of life in the elemental sense, so that he will be neither a prude nor a poseur. He must have new ideas, and old ideals. He must possess the courage of a crusader and the level-headed common-sense of a corking-good foreman. And above all else he must believe in his job with all of his heart, soul, body and gizzard, and throw himself into the work with reckless abandon.

An imposing array of qualifications, I grant you. But there are men capable of measuring up to these rigid standards. Somehow, in some way, they must be found and trained for the all-important tasks which they are to perform. In some of our commercial organizations men are being selected from the ranks and schooled for service in this development work. I, for one, believe the method has tremendous possibilities, although it is a bit too soon to point to definite results.

But what, you ask, is this new development man to do? What are his specific duties?

My answer is that the right kind of development man will have no "specific" duties. He will be a man who is big enough to make his own rules and regulations, and map out his own course of endeavor. In a measure he will be in a position parallel to that of an executive whom John D. Rockefeller once employed, at a rather stiff salary.

"But what," asked an associate, "are the man's duties?"

"His duties," smiled Rockefeller, "consist of putting his feet on the desk, sitting back and dreaming out new plans to make money for the Standard Oil Company."

Instead of dreaming out plans to make money, the development man will be busying himself making men. But then the distinction is not so great after all. For every far-seeing executive knows that an organization of the right kind of men is worth far more than a whole army of dollars rusting away in the bank. You recall what a great industrial leader once said: "Take my money and leave me my organization, and I'll recoup the losses within five years. But take my organization and leave me my money, and I am a ruined man.

I may be unable to set down a cut-and-dried list of the duties of our development man. But there is one thing I am certain he will *not do*. You may be sure that this man will have too much common-sense and good judgment to try to cram any sort of doctrine down the throat of a workman who doesn't express a keen desire for said doctrine. Nor, will he try to force the interests of workmen along unnatural lines. He will not say to them, in effect, "You *must* be interested in this nice library of good moral books we have provided," when all the time it is perfectly evident that the workman cares a whole lot more about baseball and boxing. In short, the development man of the near future, is going to interest himself in the things that most interest the workmen, and thus help them to make their dreams come true. This is the plan which the great Curtis Publishing Company has followed with such marked success. An evidence of the company's interest in the development of its employees is the well-known Curtis Country Club. Years ago the workmen took the initiative and started the "club" in a dilapidated barn, in an uninviting spot. Their efforts came to the attention of Mr. Curtis. He went out and looked over the building and grounds. "It isn't much of a place" was his laconic comment.

"You are right," was answer. "But the boys can't afford anything better."

"The company can," replied Mr. Curtis. And the company did. Today the Curtis Publishing Company supports a splendid Country Club for its employees, in the suburbs of Philadelphia. There is a club house which can entertain two thousand persons at one time, set in a great wooded park of 154 acres. A huge outdoor swimming pool faces the club house. Other features include two baseball diamonds; six tennis courts; a quarter-mile running track; a 220-yard straightway track; football oval; a shooting range and gun club. There is also a considerable amount of space devoted to vegetable gardens, and over 100 bungalows, equipped with running water, gas, and kitchen range. The company leases these bungalows to families of its employees for an entire summer for $65.00.

I realize that in preceding paragraphs considerable emphasis has been placed on recreational development. I have no apology to make. For this, unquestionably, is a tremendously important phase of the development man's work. In no other way can we so easily and effectively inculcate into an organization the "one-big-family" spirit about which we hear so much talk nowadays.

But I do not want to be understood as sponsoring a policy of recreational work to the exclusion of all other considerations. Mental development, too, is of the greatest importance. We haven't been doing nearly enough of this sort of thing. For one hundred and fifty years American industry has neglected its greatest asset—men. Now the time has come to make the most of this raw material. It is from the ranks of today's young workmen that industry must, to a great degree, draft tomorrow's executives and sub-executives. Under the present system an exceptional man occasionally forces his way to the top in spite of obstacles. But each year there is a tremendous increase in the demand for trained men. There aren't nearly enough to meet the need. Forward-looking industrial leaders are unanimous in declaring that we must encourage more men to climb up from the ranks. And we must make it *easier* for them to climb. To a great degree, the responsibility for this educational work must rest upon the development man. It is he who must "sell,' this idea of personal advancement to the rank and file of workmen, and gain and maintain their hearty acceptation of the plan.

In the larger institutions the development man will, no doubt, establish and conduct classes for the specialized training of workmen. In the smaller plants his work will necessarily be more in the nature of individual instruction and encouragement. A good many concerns have already undertaken this educational work among their employees, but the next decade will see it carried much farther.

Since it is highly improbable that either the development man or his assistants will possess the specialized knowledge necessary to instruct the various workmen in all of the branches of endeavor in which their interests lie, the solution, it seems to me, is to have each workman enroll for a practical correspondence course, along the line in which he wishes to further himself, and carry on his studies with the help and inspiration of the Development Department. If a sufficient number of men should enroll for the same course, a class could be formed and a definite study period allotted. The lessons from the correspondence school would then be used as text books. Under this system the "moral support" and intelligent interest of the development man would literally work miracles among the men. With proper, systematic application there would be very few stragglers to fall by the wayside and the company would be assured an ample supply of trained workers. It is in this way, I am confident, that we shall solve one of the really pressing problems of tomorrow.

A FABLE FOR BUILDERS

Last Summer a Good Citizen of a certain town, not over a hundred miles from almost everywhere, built a wooden house for a woman and her children. He built the chimney of brick because he had to do so. The chimney was able to stand alone, so he did not have to prop it with wood. But the floors of the house would not stay up without props. The good citizen saved a dollar by using the chimney as a support for the floors. He nestled the ends of the floor joist nicely into the brick of the chimney. He then covered up the job and got his money.

The rains fell and the winds blew in the most Biblical manner and Winter came after its usual fashion. The chimney settled a little and there was a tiny crack.

One morning the woman woke up with fire all about her. She tried to get to her children. If she got to them, no one ever knew it. The good citizen who built the house was not arrested for manslaughter. He is still building other houses of the same kind for other women and children.

He makes his living by it.

Woodlands Section

LABOR CONCERNED AT FOREST LOSSES

That labor is becoming much concerned over the menace to employment caused by forest fires is emphasized in a public statement by Mr. Tom Moore, president of the Trades and Labor Congress of Canada.

"To my way of thinking a timber tree is not the raw material for 'lumber' or 'pulp' and 'paper' so much as the raw material of wage earners, thriving towns, busy railways and public treasures. We burn down forests and think we are destroying only some corporation's timber. The more vital fact is that a burning forest burns up pay envelopes. Until we identify the conservation of the forests with prolific employment and human happiness we will continue to destroy the forest.

"A large proportion of the amount received for every log is ultimately spent on labor. This shows very plainly that the protection of the forest is another term for the protection of jobs.

"I want to urge every friend of labor throughout Canada to think this over. Nearly six thousand forest fires occur each year in the Dominion and I am reliably informed, nine-tenths of them through human recklessness, such as camp fires, lighted matches and tobacco. Every fire helps to postpone employment for one or many men. Every burned area announces that no industry will start there, no wages will be distributed there for perhaps a century to come. That is the real meaning of forest destruction."

SIR WM. PRICE SAYS BARNJUM IS RIGHT

Some days ago the attention of Sir William Price was drawn to the recent editorial of a French morning newspaper, in which statements were made purporting to come from Provincial Foresters. This with the apparent object of discrediting the efforts of Mr. F. J. Barnjum who is endeavoring to make the public realize the danger of the exhaustion of our forests through fire, natural enemies and bad forest management.

Asked for his opinion, Sir William said with emphasis: "The statements made by Mr. Barnjum are correct and his warnings in no way exaggerated. If Provincial Foresters have really expressed themselves in an opposite sense, which I can hardly believe, they are running directly contrary to the professed conservation policy of the Government by whom they are employed, and to their own knowledge of the facts.

"I will deal only with conditions in this Province and let figures speak for themselves. Last year, to produce 1,088,205 tons of pulp, 1,405,440 cords, or 702,722,000 feet board measure, of pulpwood were consumed by 46 mills. In addition, 553,836 cords, or 276,918,000 feet board measure, were exported to the United States and about 925,360,000 feet, board measure, were used for other forest products the whole accounting for a total wood cut of approximately 1,905,000,000 feet board measure. To this consumption must be added in the future 500,000 cords of pulpwood — an amount that practically equals the present export — to provide for new mills or paper machines now under construction.

"It is only with the most intensive protection and the strictest conservation that it will be possible to maintain this vast supply of raw material to Provincial forest industries. In some districts a timber shortage is already well in sight and it will be necessary for the mills operating there to purchase all the available pulpwood that is produced in the Province.

"There is therefore no surplus supply for export and mills in Quebec are going to be short exactly the quantity of wood that is sold to mills in the United States, unless our forest reserves are depleted in defiance of conservation. This means that they will be unable to operate at capacity and will give less employment to labor. The people of the Province may do what they like about it but they cannot change the state of affairs I have outlined, and regarding which Mr. Barnjum is warning them, by denying that it exists." — Quebec Chronicle.

BEETLES BORING HEART OF TREES

The research work conducted by the Dominion Entomological Branch in New Brunswick this year has been confined largely to a study of the burned timber areas which are being infected by the beetles and borers which attack burned timber following fires. Authentic information received from the North Shore shows clearly the difficulties which are being experienced in this direction. It was stated that in some of the larger sections the calculations which were originally made following the fires, from an inspection of the areas, and on which were based to some extent the policy in regard to this season's cut, have been entirely upset by the swift and unexpected attack of the beetle. While this has been confined generally to areas in which the budworm has previously operated and the unexpected intensity of the attack of the beetle following recent fires is partially attributed to the budworm preparation, the extent of the destruction wrought has been such as to necessitate complete changes in plans.

Particularly this is true of pine areas near the Tabusintac river where the beetle has already bored through the heart of the trees, whereas boring to the depth of one inch was the utmost at first predicted for the present season. While it was said to be almost unbelievable, it was stated to-day that there are piles of sawdust five and six inches in depth surrounding the base of infected pines and on windy days the atmosphere is full of flying sawdust.

TRAINING BOYS FOR CANADA

The farm of Craigielina, near Paisley, Scotland, was formally opened recently by Dr. Crosssar as a training centre for city boys who desire to go on the land in the overseas dominions. Since last autumn 90 boys have gone from the farm to Canada.

It is not the things we call best that make men; it is life's rugged experiences, its tempests, its trials.

TECHNICAL SECTION

REVIEW OF RECENT LITERATURE

TESTING

A-4 The Microscopical Differentiation of Unbleached Soda (Sulphate) and Sulphite Pulps by Lofton and Merritt's method. G. WISBAR. **Mitt. Materialprufungsamt** Vol. 6. (1922); **Wochlb. Papierfabr.** 54, 1993-1996 (July 14, 1923); **Papierfabr.** 21, 349-351 (July 29, 1923). The Lofton and Merritt test for unbleached sulphate and sulphite fibers in general proved satisfactory. With well cooked pulps the coloration was pale or entirely lacking. Powdered fuchsin was found more easily soluble than the granulated dyestuff. Instead of coloring the fibers on a microscopical slide the author recommends the use of a test tube. He prepares the samples in the usual way and then treats a small sample of the fibrous suspension in a test tube with a solution prepared as follows: 4.4 cc. of a 1% fuchsin solution are added to 2.2 cc. of a 0.5% solution of hydrochloric acid and the whole is diluted to 100 cc. with water. The mixture is boiled 1 to 2 min. The colors are somewhat different from those usually observed; the sulphite fibers are reddish-violet, while the sulphate fibers are blue with a greenish or reddish tint. In comparing the American method with the German modification and with Klemm's test, in which rosaniline sulphate is used instead of fuchsin, the first mentioned gave higher results with sulphite fibers. Undecomposed particles of wood also are blue, but can be distinguished from the sulphate fibers by their greater opacity.-J.L.P.

A-4; E-1 Device for Removing Test Samples from Digesters while under Pressure. ANTON D. J. KUHN. Ger. pat. 376,768. **Zellstoff U. Papier** 3, 148-149 (June 1923). A chamber, provided with a 3-way valve, is so arranged as to permit an easy withdrawal of pulp samples for testing.-J.L.P.

A-4 Testing the Strength of Pulps. R. W. SINDALL and BACON. **World's Paper Trade Rev.** 79, No. 15, 1268-1278, 1292-1298 (April 13, 1923); **Paper Makers' Monthly J.** 61, 155-160 (April 16, 1923); **Paper Maker and Brit. Paper Trade J.** 75, 586-591 (May 1, 1923); **Paper Making** 42, 160-165 (May 1923); **Paper 32,** No. 5. 7-10, 21 (May 23, 1923); **Paper Trade J.** 76, No. 8 (Aug. 23, 1923). — A discussion (with description and results of tests) of the factors influencing results in strength testing of pulps, which indicates that it is necessary to hydrate the pulp and submit it to some beating process in order to bring out fully its paper making qualities.-A.P.-C.

A-14 M-12 Report of the Paper Testing Committee on the Tearing Test of Paper. SIDNEY D. WELLS. **Paper Trade J.** 76, No. 26, 49-53 (June 28, 1923). — Results obtained by 16 testing stations (14 with Elmendorf, 1 with Witham, and 1 with Eastern Mfg. Co. testers) on 12 sets of samples are tabulated and commented. With the Elmendorf testers the factors influencing the tests seem to be related more to variations in the paper rather than in the instrument. Possible causes for undue variations are discussed, and recommendations for obtaining maximum concordance of results are made.-A.P.-C.

A-14 The Elmendorf Tearing Test and its Relation to the Bursting Strength Test. E. SUTERMEISTER. **Paper Ind.** 5, 477-479 (June 1923). Comparative tests on 77 samples showed that there is no constant relation between the bursting and tearing strength. Tests on samples of pulp beaten ½, 1, 1-½ and 2 hours showed that the bursting strength increases as the time of beating is lengthened; while the Elmendorf tearing test is practically constant and is independent of the time of beating, showing that there is still a certain quality in connection with the tearing of paper which is not taken into account by the Elmendorf tester.-A.-P.-C.

A-14 Quality and Properties of the Chief Grades of Paper. E. ARNOULD. **Papier** 25, 385-389 (Sept. 1922). **Pulp and Paper** 21, 525-528 (May 24, 1923). — See **Pulp and Paper** 20, 2023 (Dec. 21, 1922); **Paper Trade J.** 75, No. 26, 56, Dec. 28, 1922).-A.P.C.

A-14 Testing Blotting Papers. G. DALEN. **Paper** 32, No. 7, 5-8, 28 (June 6, 1923). See **Paper Trade J.** 77, No. 8, 51 (Aug. 23, 1923).-A.P.-C.

A-14, K-7 Elasticity of (Rubber) Latex Paper. A. D. LUTTRINGER. **Caoutchouc et Gutta-Percha** 20, 701 (1923). Comparison of two papers of similar character but of which one had been prepared with the addition of 1% of rubber latex, was made, using a Breuil elasto-durometer, and measuring the rebound of a steel ball, 5 mm. in diameter, after a fall of 250 mm. on to a steel plate covered with the sample under test. With the latex paper the rebound was approximately 3% greater than with the other. C. J WEST.

A-14 Tearing Test for Paper. B. ANDERSON. **Svensk Pappers Tid.** 25, 405-406 (1922). **Chem. Apstr.** 17, 2783. An original apparatus used in Vasteras is described with cut. It is graduated in kilos centimeters. The specific tearing work. R, is calculated from the equation: $R \quad Ru/ln \ \Delta$ in kilo centimeters per square centimeter, where Ru is the tearing work read from the scale, **1** is the length of the strip of paper tested, **n** is the number of parallel strips and Δ is the thickness of the paper, all expressed in centimeters. R/10 times the specific gravity equals the tearing surface, the area of free hanging paper whose weight will cause the paper to tear. A table shows the variable effect of temperature.-C. J. WEST.

PAPER SPECIALTIES

K-23 Paper for Covering Tobacco. JACOBUS SPYKER. Ger. pat. 376,763. **Papierfabr.** 21, 298 (June 17, 1923). A thin layer of pulp is soaked in an adhesive, as tobacco oil, and, while moist, is dusted with finely divided tobacco. Subsequently it is dried in a chamber filled with warm air.-J.L.P.

K-23. Process for Covering Substances, Especially Paper, with Sheet Metal. Wickels Metall-Papier-Werke. Ger. pat. 376,614. **Papierfabr,** 21, 298 (June 17, 1923). The process consists of hot and cold rolling, with the use of an adhesive. J.L.P.

K-23 Paper for Stamps. FRED J. MELVILLE. **World's Paper Trade Rev.** 79, 1600-1606 (May 11, 1923). — A popular description of the manufacture of watermarked paper for postage stamps as carried out at the Roughway Mills, England.-A.P.-C.

K-23 A-14 Ageing of Rubber Latex Paper. MERLE B. SHAW and F. T. CARSON. Bureau of Standards, Washington, D. C. **Paper Trade J.** 76, No. 25 47-49 (June 21, 1923). — Successive analyses of the same papers with increasing age indicated comparatively rapid oxidation of the rubber retained in the papers. With sulphite and soda papers complete oxidation took a few days, while with rag papers oxidation of the greater part of the rubber took several months.-A.P.-C.

K-23 Safety Paper. T. UEKA and the KABUSHIKI KAISHA SHOEIDO INSATS SUJO. Jap. pat. 41,380. Jan. 11, 1922. **Cham. Abstr.** 17, 2645. A design is printed with a fish glue of a dyestuff, such as Victoria blue, which can be bleached by acid or a bleaching solution, and the paper is exposed to vapor of formaldehyde to waterproof the design. When letters written with ink are erased with ink-eraser the design is also erased.-C. J. West.

K-19 Paraffin Paper for Mimeograph. FUJITO YAMANOUCHI. Jap. pat. 41,034. Dec. 9, 1921. **Chem. Abstr.** 17, 2191. A film of dammar is made on a paper by painting with a carbon disulphide solution of dammar and drying oil, such as castor, tung oils, etc. on which a paraffin film is produced. C.J.WEST.

BOARDS

K-18 Manufacture of Pasteboard from Finely Divided Wood. MOISE SEREBRIANY. Ger. pat. 377-155. **Papierfabr.** 21, 307 (June 24, 1923). Finely ground wood, including the bark, is mixed with rosin, dissolved in a solvent. A small amount of sodium chloride is added after the solvent has evaporated. Conversion to pasteboard is accomplished in the usual way.-J.L.P.

K-18 Economical Asbestos Board. W. HERZBERG. **Mitt. Materialprufungsamt** vol. 6 (1922); **Wochlb. Papierfabr.** 54, 1856-1857 (June 30, 1923); **Papierfabr.** 21, 334 (July 15, 1923). Manufacturers of asbestos board in Germany have agreed that chemically pure asbestos shall consist of 100% asbestos, and that 97-98% asbestos board shall contain up to 3% of binding material.-J.L.P.

K-18 Manufacture and Coloring of Box Board. ARTHUR T. BRAINERD. **American Dyestuff Reporter** 12, 421-423 (June, 1923). — A general discussion, covering the advantages of box board, raw material, equipment machinery and labor. Paper board is usually dyed with the cheapest available dyestuff which will produce the shade desired, or any shade that will be saleable. Fastness requirements are not exacting. Sizing and testing are discussed briefly.-C.J. West.

MISCELLANEOUS

C-8 The Variables of Wood Chips. THEODORE SAFFORD. **Pulp and Paper** 21, 575-576 (June 7, 1923); **Paper Mill** 47, No. 23, 12-14 (June 9, 1923); **Paper Ind.** 5, 497 (June 1923). — A discussion of the importance of paying proper attention and giving proper care to chip-producing equipment, and of some causes of lack of uniformity of chips.-A.P.-C.

E-2 N-0 Heat Economy in Pulp Mills. J. PFOTZER. **Wochbl. Papierfabr.** 54, 1853-1854 (June 30, 1923). Utilization of the heat in the gas-free digester condensate is suggested as an economy measure.-J.L.P.

G-11 K-13 Screen Save-Alls. A .W. NASON, Green Bay Foundry and Machine Co. **Paper Mill** 47, No. 22, 42, 44 (June 2, 1923). — A discussion of the merits of screen savealls as compared with settling tank and coagulant types.-A.P.-C.

K-13 Boothal Pulp and Water Saving. L. M. BOOTH. Booth Chemical Co. **Paper Mill** 47, No. 22, 32 (June 2, 1923). — The Boothal pulp saving process consists in adding a small amount of a coagulant (with alum base) to the excess white water, delivering the quick settling coagulated stock back to the paper machine and using the clear water from the top of the settling tank wherever required.-A.P.-C.

K-14 Supplying Natural Water Content to Paper. I. L. SJOSTROM. Eng. pat. 193,095. The paper is led through an airtight casing by an endless conveyor. A number of porous cylinders containing liquid are in the casing and the paper web is passed over these in order to absorb moisture.-A.P.-C.

M-7 New Devices for Heating Paper Mills. ANON. **Papierfabr**, 21, 333-334 (June 24, 1923). A discussion of the Thermon individual heating apparatus.-J.L.P.

M-8 Belting in Pulp and Paper Mills. WILLIAM WARR. **Paper Mill** 47, No. 22, 64, 66, 68 (June 2, 1923). — A discussion of the selection, operation and care of transmission belting for main drives, beater drives, variable speed paper machine drives, and centrifugal pumps; and of the proper use of fasteners, endless belts and belt dressings.-A.P.-C.

N-4 Selecting a Boiler Feed Regulator for the Paper Mill Power Plant. W. F. SCHAPHORST. **Paper Trade J.** 76, No. 25, 34-42 (June 21, 1923). — A comparison of hand and automatic boiler feed showing the characteristics required of a good automatic feed and its advantages.-A.P.-C.

N-4 Flow Meters as Applied to the Paper Industry. JAMES MESS. **Pulp and Paper** 21, 621-622 (June 21, 1923). General discussion of their advantage.-A.P.-C.

R-2 Abstracts of the Pulp and Paper Literature: Mechanical Part. W. GRUNEWALD. **Zellstoff U. Papier** 3, 150-156 (June 1923). The abstracts are limited almost entirely to German journals. The period covered is Oct. 1922 to March 1923, inclusive.-J. L.P.

R-2 Bibliography of Paper Making for 1922. CLARENCE J. WEST and A. PAPINEAU-COUTURE. **Paper Trade J.** 76, No. 16, 49-52 (Apr. 19, 1923); No. 17 53-56 (Apr. 26, 1923); No. 18, 53-56 (May 3, 1923), No. 19, 52-56 (May 10, 1923), No. 20, 48-50 (May 17, 1923). No. 22, 55-58 (May 31, 1923); No. 23, 62-64 (June 7, 1923), No. 25, 54-56 (June 21, 1923); No. 26, 48 (June 28, 1923).-A.P.-C.

R-5 The Pulp and Paper Industry of Italy. F. A. SHEPLEY. **Paper Ind.** 5, 469-471 (June 1923). Brief analysis of the present status of the industry.-A.P.-C.

R-6 Waste Material and Waste in the Paper Industry. POSSANNER. **Papierfabr.** 21, 304-306 (June 24, 1923); 311-313 (July 1, 1923); 331-333 (July 15, 1923). A series of extensive articles on this subject, taken from the author's textbook on the chemical technology of paper.-J.L.P.

R-0 Classification and Definitions of Paper. CLARENCE J. WEST **Paper Trade J.** 76, No. 22, 49-54 (May 31, 1923). — A combined report of the committee appointed Aug. 30, 1921 to develop a suitable classification of paper for statistical purposes and to draft tentative definitions of the terms used in the manufacture and merchandizing of paper.-A.P.-C.

PULP AND PAPER NEWS

William H. Greenwood, who passed away in Toronto last week after a long illness, in his fifty-second year, was a widely known newspaper man and for many years was managing director of the Toronto World. After leaving newspaper work he was engaged in financial promotion operations in England. Mr. Greenwood, who is survived by a wife and two daughters, was a brother of Sir Hamar Greenwood, former Chief Secretary for Ireland.

James Lanigan, an employee of the Belleville Paper Mills near Belleville, Ont. received fatal injuries when he was caught between a pulley and some shafting and was drawn in head first. He died shortly after being removed to the hospital as a result of many bruises and fractures sustained.

It is learned that the Nipigon Fibre and Paper Company's plant at Nipigon, Ont, which has been idle for a long time owing to the parent company going into liquidation, will be put in operation again in the near future. The Guaranty Investment Co, of Montreal, acting for interested parties, has taken over the property which is being overhauled. Engineer Tutt of Montreal is now on the round supervising the work. The plant is equipped with 8 grinders and 10 wet machines and has a capacity of 70 tons daily of groundwood pulp.

Of the entire force of over 40 fire rangers and foresters, who have been on duty during the past summer in the district around Sudbury, nearly all have completed their work for the season. The ten chief fire rangers, who have charge of the territory supervised from the Sudbury office, will be on the job for some time yet. There has been no trace of forest fires in the district for some weeks.

A charter has been granted to the Provincial Carton Co, Limited, Toronto, with a share capital of $40,000 to manufacture, import, export and deal in goods of various kinds.

Alex J. McComber, J. L. McComber and George J. McComber of Port Arthur are among the provisional incorporators of the Shuniah Lumber Co. Limited, Port Arthur, Ont. which was recently granted a provincial charter to buy, sell and deal in wood of all kinds, pulp woods etc. The authorized capital is $40,000.

In order to facilitate construction on the new groundwood pulp plant of the Great Lakes Paper Co. at Fort William, Ont. the city council has passed a bylaw authorizing the closing of several street ends near the site of the plant. The Department of Lands and Forests for Ontario is calling for tenders for the right to cut timber, part of which is burned, in Rennie township, district of Sudbury. The area possesses a certain quantity of pulpwood as well as jack pine. Tenders for the timber rights will close on November 5.

Alex R. White, chief sanitary inspector of the Provincial Board of Health for Ontario, now has his headquarters at Spadina House, Toronto, instead of North Bay. Mr. White has supervision of all lumber, pulp wood and other camps in the unorganized districts of the province.

Several improvements have been carried out during the past few months to the plant of the Mattagami Pulp and Paper Co, Smooth Rock Falls, Ont. Digesters have been re-lined and production costs brought down to a reasonable figure through effecting various economies. A good sales organization has been built up and the plant is now operating at full capacity on unbleached pulp. The company has very little pulp on hand unsold and has been able to show some profit on operation. For the past two years the affairs of the company have been in the hands of a Receiver. Production records during late months have been better than they ever were.

L. L. Brown, of Victoria, British Columbia Lumber Commissioner, who has been spending the past few weeks in Toronto, Montreal, and other cities, has returned to the Coast. He will leave in a few weeks for London, Eng, where he will supervise the exhibit of the Pacific Coast province at the British Empire Exhibition next year.

The Daily Intelligencer of Belleville, Ont, which for over half a century has been in the hands of the Bowell family, has changed hands having been sold to interests represented by S. B. Dawson, formerly of Toronto and Stratford. Toronto and Belleville capital is interested in the transaction.

Under the extension department of the University of Toronto, a five months course in Journalism has been started with J. Vernon McKenzie as instructor. The class is being attended by over one hundred students.

In a recent address before the Shuniah Club at Port Arthur, Hon. James Lyons, Ontario Minister of Lands and Forests, stated that adequate provision would be made in timber limits for the expansion of the pulp and paper plants of Port Arthur and Fort William. He said that the pulp and paper industry was one of the chief factors of the development of the North and the province intended to take care of its existing mills. Additional limits would be placed on the market to ensure the development of the present propositions. This would be done immediately but after a general survey of the timber and water powers of the province had been made. Dealing with forest fires, Hon. Mr. Lyons observed that the Department of Lands and Forests had 1,200 men fighting fires in Ontario with four areoplanes, involving an expenditure of over a million dollars. The Government was going as far as it could in protecting the north country. Touching upon the development of Sault Ste. Marie, Mr. Lyons spoke of a train load of 42 cars of newsprint being hauled into Toronto representing 86 hours output of one mill. Mr. Lyons declared that Foleyet, Alsace, Sioux Lookout and other places were anxious to establish pulp and paper mills. In conclusion, he remarked, "The Government has to determine what is best for the whole province but the people of Port Arthur and Fort William need be nothing but optimistic''.

NEW BRUNSWICK NEWS

G. B. Jones, a member of the House of Commons from the Kings-Queens constituency of New Brunswick, declares the pulp and paper and lumbering industries must receive relief from the burden of taxation imposed by the Workman's Compensation Board. He points out that in New Brunswick, the rate is 8 per cent, while in Nova Scotia the rate is 3 1-2 per cent.

R. W. McLellan of Fredericton, N. B. secretary-treasurer of the New Brunswick Lumbermen's Association and a member of the the royal commission to investigate the pulpwood question, says there must be a reduction of the compensation rate in New Brunswick in the near future.

The gist of the testimony before the pulpwood commission in the New Brunswick sittings thus far held is that fire is the greatest devastating force to the pulpwood resources of New Brunswick. A. J. Sellows of Hampton, N. B., a pulpwood dealer, asserts the bulk of the fires can be attributed to slash burning. He suggests that the slash burning be limited to the operating season. Thinning has been advocated as a means of conservation of pulpwood in New Brunswick. It is declared that this means would benefit the pulp and paper industry considerably. Many of the witnesses that have testified before the pulpwood commission are representatives of United States pulp and paper companies. These men are in charge of cutting operations on lands owned or leased by the concerns and it is but natural to expect they would be opposed to an embargo.

P. J. Veniot, premier of New Brunswick announces that a conference of employers of the province and the government of the province will soon take place, the subject to be thoroughly discussed being the Workman's Compensation Board of the province.

The Nashwaak Pulp and Paper Company is interested not only in pulp and paper. This company owns soft coal mines in the Grand Lake section of New Brunswick.

Most of the politicians are waiting to see how the proposed embargo affects their interests before announcing their stands on this question.

John D. Kay, a farmer and pulpwood operator of York County supported the embargo. He said peeled pulpwood should not be exported. He said farmers were cutting pulpwood who should be attending to their farms and asserted a large quantity of pulpwood was allowed to decay. He said men were demanding high wages for cutting and peeling pulpwood and in five years there would be no wood remaining. In his testimony before the pulpwood commission he expressed himself highly in favor of the embargo, from the standpoint of a farmer. He stated his belief that an embargo on exportation to the United States would be a means of conservation, as the pulpwood was being shipped across the border in large quantities this year.

CANADA'S PULP AND PAPER MILLS

There were 104 pulp and paper mills in operation in Canada in 1922, with a total net value of production of $155,785,388, according to a preliminary report issued by the Dominion Bureau of Statistics. The amount of capital invested in the industry increased from $379,812,751 in 1921, to $381,006,324 in 1922. The number of employees in the pulp and paper industry in 1922 was 25,830, while wages and salaries amounted to $32,918,955. The major share of paper and pulp exports went to the United States. It is interesting to note that more than 50 per cent. of the exports of pulpwood was supplied by the Province of Quebec.

C. NELSON GAIN LEAVING DON VALLEY

C. Nelson Gain, of Toronto, who for the past eight years has been associated with the Don Valley Paper Mills, Toronto, as general superintendent, has been appointed general manager of the Garden City Paper Mills Co. Limited, St. Catharines and the Canadian Vegetable Parchment Co. Limited and allied organization. He will enter upon his new duties in a few weeks and will also have charge of the new specialty mill which the Garden City Co. intend erecting next year at St. Catharines. Many friends will congratulate him on his advancement to such a responsible post. Mr. Gain is widely known in the industry and, for the past two years, has been President of the Ontario Pulp and Paper Makers Safety Association. He is also Vice-chairman of the Technical Section of the Canadian Pulp and Paper Association. He has had a wide experience and insight into the industry, serving for some years in the beater and machine rooms of the American Writing Paper Co. at Windsor Locks, Conn. Subsequently he was chemist with the Walloomsac Paper Co, Walloomsac, N. Y. for three years and then joined the Kinleith Paper Co, at St. Catherines, where he was assistant superintendent. In 1915 he came to Toronto and has ever since been identified with the Don Valley Paper Co. The Gain family has long been prominently connected with the paper trade. Thomas Gain, father of C. Nelson Gain, was for many years with the Lincoln Paper Co. Merritton, and the Don Valley, Co. T. E. Gain, another is Vice-President of the Ratcliff Paper Co. Toronto.

MR. C. NELSON GAIN

MR. BOOTH ON HOLIDAY

J. R. Booth, Canada's most widely-known and oldest lumberman, has gone to Madawaska to spend his annual holiday. Mr. Booth is in his usual good health, and during his stay in the north country will renew many old acquaintances. Although he is 96 years old, Mr. Booth is in constant touch with his business affairs. He has been in the lumber business for 75 years.

UNITED STATES NOTES

Over two hundred prominent members of the New York paper industry attended the opening of the New York branch of the Paper Industries Exchange last week. Trading was very lively at the market's initial session and a number of large lots changed hands before early afternoon when the bidding ended. The exchange, which is in the Pershing Square Building on East Forty-second street, is the first thing of the sort New York paper men have ever attempted. It is a branch of the exchange opened two months ago in Chicago and has direct wire connection with it. The paper industries exchange is modeled on the Metals Exchange and the Cotton Exchange in principle. John R. Mauff, executive vice-president of the exchange opened the new branch with a brief address. Trading will continue every day except Saturday and Sunday. The manager in charge is A. J. Neumann.

Herbert Augustus Wilder, director of the International Paper Company, died October 12, at his home Newton, Mass. He was 86 years old. During his last years he had suffered from growing blindness. The affliction had become of such a character that he recently had submitted to a surgical operation for cataract of the eye in hopes of improving or recovering his eyesight. Mr. Wilder was born in Attleboro, Mass., 1837, and he began his long career in the paper business when he was twenty-one. He is survived by three daughters.

Holyoke paper manufacturing has been much handicapped during the past few weeks by low water conditions. The gates to the canals have been shut no fewer than eleven times this season. Production is considerably curtailed and the plants have been put to much expense by the need to stop and start the machines repeatedly.

Expansion plans and new construction calling for the expenditure of many thousands of dollars, and in some instances running as high as a million dollars or more, are being put into execution by some of the leading paper mills in the United States. If all other signs indicating a healthy state in the condition of the paper industry were lacking, this alone could be taken as a certain portend of a favorable outlook.

The Eddy Paper Corporation, under new management, has completed, or has under way, many improvements and several necessary extensions, all of which will greatly increase the production and the operating efficiency of its plants. Work on additions and installations is going on at the present at the Eddy plants, Three Rivers, Mich., and White Pigeon.

Construction work on the model plant building for the Brown Paper Mill Co., Inc., at Monroe, La., is nearing completion. It is planned to have this new mill in operation no later than May 1, 1924. With the completion of the mill the Brown Company will have a plant that will be a real asset to the vicinity in which it is located and one that will be a distinct addition to the paper making industry. Pusey & Jones will install a Fourdrinier which, it is claimed will be the fastest and widest machine of its kind in the world. Kraft paper is to be the mill's exclusive product and at the start a daily capacity of 65 tons is expected.

Among improvements made at mill of the Crystal Tissue Company of Middleton, Ohio, is the addition of a new 140 inch Black & Clawson tissue machine. The company now operates five machines. These are all of the one cylinder type, designed to make grade light weight tissues only, and probably represent the largest capacity in this particular type and grade of paper in the world.

The Central Paper Company, Muskegon, Michigan, is having Bagley & Sewell install a new 144 inch high speed Fourdrinier, increasing the capacity of its mill from 65 tons of paper daily to 120 tons, one-third sulphite and two thirds kraft.

The Hammond Bag & Paper Co. has just completed its new paper mill and bag factory at Willsburg, W. Va. The new plant, which is described as one of the most up-to-date paper mills of recent construction, was made ready in a year from the time ground was broken for a foundation. The company was organized in April, 1922. T. H. Hammond is president and general manager, and M. J. Davis is secretary. The products of the new plant will include a complete line of manila rope papers and rope paper bags for flour, cement, lime plaster and other builders' materials and cereal products.

At a cost of approximately $1,250,000, the Pioneer Paper Company, has put up a chip board and felt mill on a site occupying seven acres in the heart of the Vernon industrial district of Los Angeles, Cal. The company, which has been making prepared roofing and building papers since its organization in 1888 by Willis G. Hunt, now includes among its products insulating papers, felts, waxed papers and chip boards. The addition to the Pioneer plant was made in anticipation of the rapid industrial development of Southern California. The new mill, warehouse and tanks adjoin the old roofing plant of the concern and with their completion, the company now boasts a total of fifteen acres of plant and other facilities

Considerable new machinery, including a new modern high speed paper making machine, together with further plant additions are nearing completion at the plant of the Southern Paper Company at Moss Point, Miss. The new additions will extend the facilities for wood preparing, liquor making, soda recovery, pulp making, paper making and power. Kraft paper made from Southern pine wood is the main product of the mill. An increase in the daily capacity to 100 tons is expected. The company has been enjoying rapid growth during the ten years since its founding under the management of Edward H. Mayo.

Numerous improvements are under way in the various divisions of the Allied Paper Mills of Kalamazoo, Mich. the most important of which are additions and installations at the Bardeen and King divisions, and mill machinery and plant improvements at the Monarch division.

Dayton, Ohio, has been selected by the executive committee of the Superintendents' Association of the Paper and Pulp Industry as the place for the next annual convention. The dates decided upon are May 22, 23 and 24, 1924.

A joint meeining of superintendents, technical men and cost people of the pulp and paper industry will be held Friday and Saturday of this week at Appleton, Wis. Special efforts have been made by Appleton paper men and manufacturers and by the local Chamber of Commerce there to make the occasion a success in every way. The Kimberly-Clark Company at Kimberly will be hosts on Saturday at a luncheon at their Kimberly mill where they expect to entertain from three to four hundred guests.

The Markets

CANADIAN TRADE CONDITIONS

There is no radical change to record in the general conditions affecting the pulp and paper trade. Business in the newsprint line continues brisk and the demand keeps up strong. The price of groundwood pulp is stiff and some mills are asking as high as $52 for their product. Other varieties of pulp are in fair requisition. Paper box plants are getting busier on specialties for the Christmas rush, the call for fancy boxes is looming up well and business is expected to increase from this out. Manufacturing stationers also report an improvement in demand.

Other lines of trade are steady and there are no new features to report. Prices remain firm. The trend of the paper business at the present time is numerous orders but for small quantities. Printers and other consumers are not buying in large lots and carry very small stocks. Of late months the character of the jobbing business has been changing. While orders have multiplied they have shrunk in value. There is, as already stated, a great preponderance of small items or consignments. The demands of customers are becoming more complex and exacting, particularly in the matter of delivery and service and a constantly increasing desire for a greater variety in stock.

At the sixth annual convention of the Canadian Paper Trade Association held in Montreal last week, reports were presented from the various divisions and it was generally agreed that the past had been very fair, so far as returns were concerned, up to the last two or three months when trade fell off in flat papers, but the members were all optimistic and look for a better year ahead. Collections were reported to be improving. On the whole during the first nine months of 1923 it was conceded that the total volume had shown some gain over the corresponding period of last year, although orders were small in amount.

Basically, conditions in the paper trade are sound and better things are anticipated from this out by both mills and distributers. This fact was brought out in conferences held during the past few days between jobbers and manufacturers in Montreal when there was evidence of continued good feeling between the different units of the industry. Association work has done much for both producers and selling agencies and a clearer understanding prevails as a result. While all lines of business are not any too brisk the paper trade is feeling the effects less than many allied industries and the future is bright with promise of expansion.

NEW YORK MARKETS

New York, October 20—(Special Correspondence)—The paper market continues to show improvement. There is a steady demand for most kinds of paper, little doubt that the industry in the States is char- and, viewing the situation in its entirety, there is acterized by better than normal activity. It is readily apparent that some branches of the industry could easily accommodate increased business, that manufacturers would welcome a further expansion of demand and that dealers and jobbers could handle a great deal more business, but the relative quietness existing in some parts of the trade is more than offset by pronounced activity in others.

The newsprint market is firm to an extreme. The movement of print paper into consumption is at a record height; in fact, although mills have been shipping newsprint in the past few weeks in larger tonnage than ever before, they are steadily finding an outlet for bigger supplies and are endeavoring to speed up their production to take care of the growing needs of publishers. Taking New York City as a criterion, there seems no question that October will establish a new high record of newsprint consumption. Never before have publishers put out issues of their newspapers in quite the size they have found necessary to print this month to carry the advertisements offered them. Yesterday one of the New York afternoon dailies printed an issue of 68 pages. This probably is a new record in number of pages of a regular issue. Moreover the paper in question claims to be the largest circulated afternoon paper in the United States, so it can be surmised how much newsprint was required for the printing of this issue. Another afternoon paper printed an issue of 40 pages; several others had issues just slightly under this in size. It is nothing uncommon for the morning New York newspapers to put out issues of 40 pages; one of the leading morning dailies has for two weeks past published issues of 48 pages on two mornings of each week.

In spite of putting out very large issues publishers are unable to accept all of the advertisements they are offered. In fact, it is getting to a point where an advertiser other than a regular advertiser of the New York dailies encounters trouble in having his advertisements printed. Publishers are apparently limiting their paper consumption to a certain tonnage, or else haven't the facilities for printing larger issues, because they are turning down lots and lots of business in the form of advertising, which means that consumption of newsprint hasn't reached a maximum by any means and that if present conditions continue publishers will doubtless provide the facilities for printing larger papers and therefore have need for a great deal more newsprint than they now are using.

No further developments have been recorded in connection with newsprint prices. American manufacturers, in at least some cases, are going ahead and contracting with publishers for next year's deliveries of standard news at current quotations, and it would appear as if no change in prices is contemplated for 1924. There is every reason to believe that manufacturers could increase prices a quarter of a cent per pound, and perhaps more, without disturbing the market in the least. The demand for newsprint is so voluminous and the need of publishers so pressing that the additional quarter of a cent per pound would be paid without objection, or with very little of it, at any rate. Newspaper publishers are certainly in a prosperous condition today — if they are not they never will be, with the volume of advertising they are printing — and their principal problem is in filling their wants with paper, not what they have to pay for newsprint. However, it is the desire and purpose of manufacturers to keep prices of paper stable, and the probabilities appear that no alteration in newsprint quotations will be made for the new year.

The strike of operatives in paper box factories in New York City has ended, and manufacturers of box board have marked up prices on plain box boards to the levels prevailing prior to the strike. News and chip are quoted at $60 per ton delivered New York by Eastern mills, compared with a price of $55 ruling last week, mills having reduced prices during the strike in the hope of stimulating demand. Quite a flurry of buying of board accompanied the termination of the strike of box makers and board mills in this part of the country are busier at present than they have been in at least a month, and probably for a longer time. The pre-holiday season in paper boxes is here, and there is a steady demand for boards.

Book paper is quotably steady and demand is gradually broadening though there is still much room for improvement. Fine papers are enjoying a fairly large demand. Business houses are purchasing stationery in good volume, and there is a consistent growth in the call for bonds and ledgers of various qualities and styles. Coarse papers are moderately active. Tissue is moving in better amounts and at maintained prices, and wrappings are selling freely in spite of the competition of foreign paper of this description.

GROUND WOOD. — While reports say that water conditions have improved in some grinding districts and that producers have been able to increase their manufacturing operations, there are no signs of available supplies of ground wood being any larger. If anything, demand is still in excess of the offered supply, and under such conditions, prices of course remain firm. American consumers are purchasing a good deal of ground wood in Canada and are paying up to $50 a ton f.o.b. pulp mills for prime spruce ground wood for prompt shipment. Whether or not higher than this price has been paid is problematical, but it seems quite probable since demand is keen and since buyers haven't a great many sources on which to draw for ground wood. Domestic quotations range from $40 per ton upward at grinding plants and very little domestic ground wood is on offer. Numerous producers who ordinarily have pulp to sell in the open market are today looking to buy ground wood to cover their own requirements.

CHEMICAL PULP — The trend of prices of chemical wood pulp has again been downward in the New York market this week. No broad changes have been noted but such revisions as have occurred have been in a lower direction. The whole market situation seems to rest on the fact that demand is slow; that paper manufacturers have fair stocks on hand and are reluctant to augment their supplies, so that anyone desiring to sell pulp is generally behooved to quote rather low prices in an effort to attract consumers into buying. Added to this weakening factor is that there are still some lots of pulp in so-called weak hands, with those owning stocks finding it imperative to convert pulp into cash in some instances, which also accounts in part for the low prices mentioned in the trade.

Kraft pulp of Scandinavian origin and of prime quality was offered on the Paper Industries Exchange in New York at 2.90 cents per pound ex dock at this port, and when an importer comes into the open and offers kraft this low it is more than likely that buyers could get orders accepted at cheaper figures. In fact, reports say that board mills evince little disposition to pay other than around 2.80 cents a pound ex dock New York for Swedish kraft pulp, while business has been reported in foreign bleached sulphite of good quality at 3.80 cents on the dock New York, and in No. 1 imported unbleached sulphite at 3 cents a pound ex dock. On the other hand, strong unbleached sulphite of foreign make has sold at 3.20 and 3.25 cents per pound ex dock at this port, and some import firms are said to be quoting above this level.

RAGS. — The papermaking rag market is in a somewhat mixed condition. There is steadiness in prices of the better grades, whereas the low qualities are tending downward. Felt paper mills have let down in their purchasing during the past few days and roofing rags are quoted at 1.50 cents a pound for No. 1 stock and down to 1.25 cents for No. 2 packing f.o.b. New York, which prices are a couple of dollars per ton below previous rates. Old white rags are firm and in good demand, and there is a steady call for blues. Repacked thirds and blues are freely bringing 3 to 3.25 cents a pound f.o.b. dealers' shipping points, and miscellaneous blues 2.40 to 2.50 cents. New cuttings are quotably steady and are in fair demand though buyers are absorbing mainly certain grades, such as white shirt, blue overall, unbleached muslin, flannelette and bathrobe cuttings.

PAPER STOCK. — The opening of the Paper Industries Exchange in New York this week has unmistakably unsettled the old paper market. While the purpose of the exchange is to provide facilities for trading on the call system in board and paper as well as the raw materials consumed by manufacturers of these commodities, with a representative group of board mills as charter members of the exchange, practically all of the trading indulged in on the exchange thus far has been in waste paper, and the exchange has paper stock dealers in this city somewhat puzzled. Demand has subsided to a marked degree, and packers and dealers have been more cautious in their operations. The result is that prices have moved downward on most grades of old paper No. 1 mixed paper has declined to 70 cents a hundred pounds f.o.b. New York, and folded newspapers are selling at 1.05 to 1.10 cents a pound New York. Hard white shavings are down to 4 cents a pound f.o.b. New York for No. 1 packing, and No. 1 soft white shavings have sagged in price to 3.10 cents. Old magazines are quoted by local dealers at 1.90 cents a pound New York, ledger stock at 2 to 2.10 cents, old No. 1 kraft paper at 2.25 cents, white blank news cuttings at 2.25 cents, and overissue newspapers at 1.30 cents. Sales of some of these grades at these prices have been recorded on the Paper Industries Exchange, a total of about 2,500 tons of waste paper having been sold on the exchange since the local branch was opened last Tuesday.

OLD ROPE AND BAGGING. — Old rope is in a strong market position and demand is gradually quickening. Paper mills apparently are in want of rope and are meeting higher prices, sales of domestic No. 1 manila rope at better than 5.75 cents a pound at dealers' shipping points having been reported, while foreign rope — of poorer quality than the domestic article has sold at 5.50 cents ex dock New York. Bagging is quiet. Tissue mills are buying only on a very small scale, and roofing mills are little interested. No. 1 scrap burlap bagging is quoted at 1.15 to 1.25 cents a pound f.o.b. New York, and roofing bagging at a cent per pound New York.

Industrial Items

NEW ENGINEERING CONCERN

The "Whisper of Death" speaks of the declined Canadian resources and Canadian Products, but we are pleased to announce that a new engineering concern, under the name of the Richelieu Engineering Company Limited, successors to Beauchemin & Company, Sorel, Quebec, has been organized for the building of paper, pulp and special machinery to be used in connection with paper and its allied industries.

This concern has made connections with many of the leading engineering concerns of the United States and is in a position to furnish complete specifications, plans and data regarding the building of paper machinery, and will furnish all kinds of bronze, lead and other fittings used in connection with the industries. The wide reputation that Beauchemin & Company have maintained with the Canadian trade insures from the beginning, the success of the Richelieu Engineering Company, and this company is connected with many of the leading engineers of Canada, as well as having a large and progressive clientèle in connection with the chosen field this company will cater to.

This company has opened a sales office at 711 Drummond Building, Montreal and all sales connected with the same will be made through the John C. Corcoran Machinery Company Limited.

WESTINGHOUSE ESTABLISHES NEW GENERAL ENGINEERING DIVISION

The Westinghouse Electric and Manufacturing Company at their South Philadelphia Works has established a General Engineering Division which will be devoted to the study of central station and industrial plant problems, which involve the application of steam power apparatus such as steam turbines, condensers and reduction gears. This department will also co-operate with the Sales Organization in providing engineering service to purchasers of this equipment.

The Elliott Company of Pittsburgh, Manufacturers of a full line of Surface and Jet Condensers, the Elliott De-aerators, the Elliott Twin Strainers and other steam specialties, have appointed as their Canadian Representatives, the Combustion Engineering Corporation Office, Bank of Hamilton Building, Toronto.

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Warwick Woollen Mills Extended Plant

Last June the Warwick Woollen Mills Limited at Warwick, Quebec, were unfortunate in having a fire in their plant which put approximately two-thirds of their buildings out of commission.

These have now been re-built and the latest model machinery has been installed and the capacity increased one-third over what it was before the fire.

Many of the executives in pulp and paper companies understood why Warwick representative has not been covering all the mills, but to the others who have missed the regular visits, they will realize that it was on account of the fire which tied up their production for the time being.

EDGAR LALIBERTÉ, B. A., L, L. B., M. P.
President, Warwick Woolen Mills Limited.

The new buildings are now completed and in operation.

The main building is 245 feet long by 36 wide and is three stories in height with an extension 140 feet long by 24 feet. The office, stock, and shipping rooms, are contained in a three story building 35 feet by 28 feet. The power house is 25 feet by 20 feet. The wool storage is 80 feet by 30 feet. The machine shop is 85 feet by 30 feet.

From these dimensions it will be realized that the Warwick Plant is quite an extensive one, and with the installation of their new modern machinery in fireproof buildings, which have their sprinkler system, they are manufacturing a complete line of FELTS for all sizes of machines, and equipped to turn out a large volume of felts for the Pulp and Paper mills in Canada.

Mr. Kirouac said that the fire had taught them a lesson which might be applicable to the pulp and paper mills, in that their orders might be divided so that if there was any interruption in their source of supply, the mills would still be in a position to carry on, as they would be familiar with the felts of another mill.

O. F. KIROUAC,
Managing Director

Mr. E Laliberté, is President, Mr. O. F. Kirouac is Managing Director, Mr. Nap. Kirouac, Director, Mr. Charles Rae, Sales Manager, who is calling particularly on the pulp and paper mills in Canada. Mr. J. F. Hughes, is their Montreal office representative.

CHARLES RAE
Sales Manager.

TO RE-OPEN PULP MILL

It is officially announced that Nipigon Pulp Mill, which is being taken over by Montreal interests after having been idle a couple of years owing to financial difficulties, will be reopened at the first of December.

The strength of a man's virtue is not to be measured by the efforts he makes under pressure, but by his ordinary conduct.—*Pascal*.

Pulp and Paper Magazine
OF CANADA

A Weekly Magazine Devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades

VOL. XXI. Gardenvale, Que., November, 1st, 1923 No. 44

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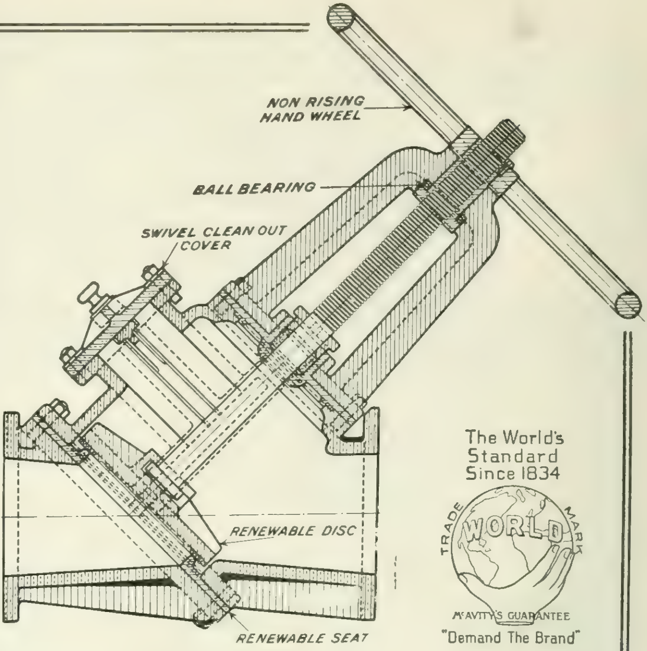

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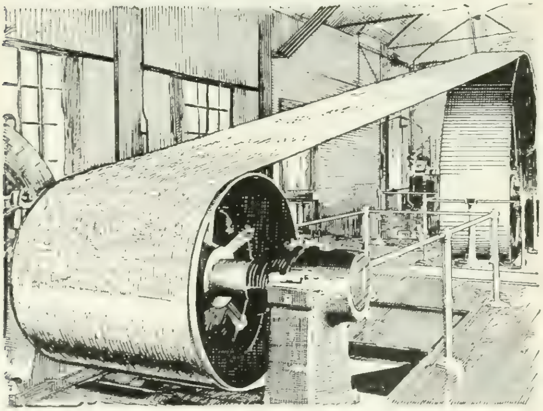

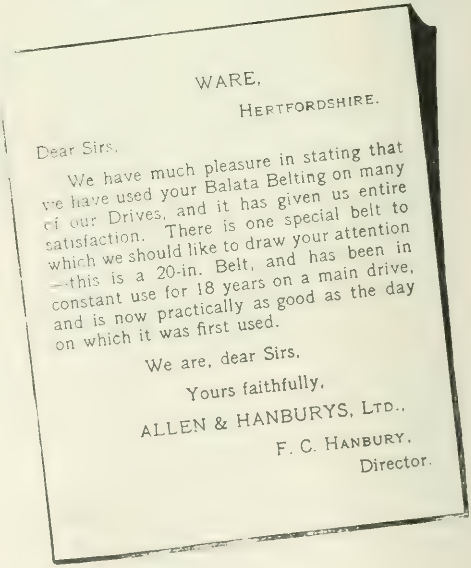

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EDITORIAL

THE PREFERENCE IDEA

The idea of a preference in trade presupposes and requires some means of compensating costs of production. The only way of doing this internationally is through some sort of tariff whereby exchanges of accommodation can be arranged. The extension of a preference necessitates the introduction of a distinction. Where there are but two countries involved the matter is simplified in the sense that a direct exchange of accommodation is possible, if there is sufficient mutual trade in commodities that are produced in one or the other more or less exclusively. But reciprocity or preference is not possible unless there be some form of tariff, the adjustment of which is the means of the accommodation. Thus, in the case of a two country arrangement Fuchsia has a duty on carrots and Dahlia has a duty on candy. Fuchsia buys carrots and sells candy, so Dahlia is approached with the proposal to lower her duty on Fuchsia's candy in return for a corresponding reduction in the duty on Dahlia's carrots.

The case of Empire preference is a different situation. Here we have a group of nations, whose trade, for political and sentimental reasons, should be largely self-contained. But in spite of protestations of belief in this policy, we find, in two parts of the Empire a very real preference given to countries outside of the Empire. Australia puts Canada in the same class as any non-British country as far as newsprint is concerned, while giving English newsprint a preferential treatment of £3 per ton. This is a double disadvantage to Canada, in that foreign newsprint can undersell the Canadian product, while the British paper, which has the advantage over all other makes, is largely made of pulp from Europe. Canadian pulp and paper, and other products too, are practically excluded from England because depreciated European exchange, poor living and wage conditions on the continent, and freight rates that are ridiculously low in comparison with Atlantic rates eastward.

Economically, England wants to buy in the cheapest market and sell to the Dominions at a tariff advantage over other countries, and has not hesitated to gain such an advantage over one of her own dominions.

On top of this we find a desire in England to place her excess population in Canada, but there has been shown no great inclination to facilitate the selling of Canadian goods in Britain on a parity with European production. Canada is glad to have immigration from England and to have their production traded for English goods, but this cannot be done unless some protection is afforded them. This is but a means of helping her own citizens getting a footing in the new world.

The result of the Imperial Trade Conference will show whether England and Australia really believe in Empire preference or are just talking.

There is much talk on the subject, outside of the Conference; in fact, the preference idea bids fair to precipitate a protection tariff as a main issue in British politics. The English manufacturer and tradesman has heretofore enjoyed the measure of prosperity that has fallen to him—or that he has gone after—largely because England has obtained cheap raw materials and had the world for a practically unrestricted market. But things have changed. The great United States market is practically closed and barred and the European market is sadly disrupted. The colonies and dominions of the Empire do not begin to represent the purchasing power of these other markets, but what there is can be fostered and developed if given some encouragement to grow. If England wants to extend her trade within the Empire, she must, as we see it give these members of her own family some advantage — certainly an even chance — with outsiders who have producing conditions, especially with regard to labor, that are not altogether consonant with British standards. Another phase of the matter is, that with a policy of protection in vogue in England there will be a basis for swapping favors with the United States as well as providing advantages to the other parts of the Empire.

The next few weeks will show important results.

The drop in exports of pulpwood during September to a point only 20 per cent. greater than for this month in 1922 follows curiously on the Order-in-Council of August 14th exempting for 10 years pulpwood contracts from any effect of an embargo. In view of the wood situation a year ago, the September exports are not far from normal.

F. H. ANSON

This issue was already on the press when word was received of the sudden death on Thursday, in Montreal, of Mr. Frank H. Anson, president of the Abitibi Power & Paper Co., Ltd. The funeral service will be at his late home, Peel Street, Montreal, Saturday, at 2.30 P.M.

SAFETY SCORES AGAIN

One of the most genuinely humane and Christian movements of our time is the Safety First Movement. It was started with the idea of reducing accidents, particularly industrial accidents, by elimination of causes. The idea has spread to the prevention of all kinds of accidents by educational campaigns, and to the conservation of health through instruction and propaganda on hygiene.

The organization of industrial activity and the awakening of the industrial conscience to its responsibility for the welfare of the worker has brought about what is little short of a revolution in the relationship of employer and employee. It is true that, in some cases, this has had to be brought home and held fast by legislation, but legislation is only the expression of an awakened public opinion on this important matter. When one stops for a moment to consider what the loss of a week, or even a day, means to many a workman, with its inevitable reaction on industry and the community, the wonder is not that so much is being done now, but rather that so little is done now and nothing was done for so long.

The people of Ontario seem to have been the first in Canada to realize the need for organized activity along health and safety lines, and for some time there has been an efficient Safety League. In addition to this, many industrial concerns belong to the National Safety Council, which has a number of subdivisions according to industries, and which has been doing a remarkable work for many years. The pulp and paper manufacturers in Ontario, besides having more or less to do with the work of the organizations mentioned, have their own Safety Association, which operates in conjunction with the Workmen's Compensation Board.

The "Pulp and Paper Magazine" has been propaganding for a long time in favor of a broader organization of safety work in Canada, particularly in the pulp and paper industry. A move along this general line was made a few days ago in the organization of the Quebec Safety League. Much help was given by Ontario friends and workers in this field. Many firms in this province were already members of the National Safety Council, but there is a big advantage in a local organization. The need of provincial organizations, which should be tied together in a national body is especially noticeable where the law varies and there are other purely local features and factors

It is very gratifying to observe this evidence of interest in safety and health in Quebec. It will mean, not only greater happiness and comfort among those most affected by accidents and sickness, but also greater dependability and continuity of production. Steadiness of operation means better wages and lower costs.

It is to be hoped that the organization of the Quebec Safety League will facilitate the co-operation of the Pulp and Paper mills in safety work and eventually result in a Safety Section of the Canadian Pulp and Paper Association.

COBWEBS

Cordwood is quoted by Sherbrooke dealers at $12. The more extensive use of fire wood would be an antidote for unemployment, and the cutting out of the hardwoods would greatly improve the forest.

But men are already at work, slashing down the finest of the young fir and spruce, to be used a few hours on Christmas day and then discarded with the empty candy boxes. Each of these little trees, if allowed to grow would make lumber to help build a house or barn, or paper on which to print many books or write letters that might be lasting contributions to human welfare.

The Military Scientific Laboratory, near Tokyo, lost a part of their library. They want some back numbers of the Pulp and Paper Magazine, all of which we can supply, except Jan. 19, 1922. Can any reader spare a copy of this issue?

The action of Great Britain in agreeing to search for liquor on vessels within 12 miles of United States shores is eloquent evidence of the very cordial relations between the two countries and shows the desire of the British to assist in the enforcement of law.

A water power was recently leased on the Megiscane River and timber limits on the Menicouagan River are to be offered at auction. We suggest that, in future, the Government either publish the correct pronounciation of these tongue-twisters, or revise the map and give them numbers.

PROGRESS

I am Progress. At my bidding
Age old customs melt away;
Constantly the world I'm ridding
Of the things that cause decay.
New inventions ever springing
At the beckon of my hand,
To a fuller life are bringing
All the world whereon we stand.
If you'd serve me and adore me,
Bow, and bend the knee before me.

N.C.R. News.

How to Forecast Your Business

"The thing that is paramount in our minds today," said President J. L. Fearing, in introducing the speaker, "is what is the business situation going to be tomorrow and next day and in the future. There is no one better qualified to give us authentic and up-to-date information on that subject than Dr. E. O. Merchant of the George H. Mead Company, and formerly prominent in connection with the work of the Federal Trade Commission."

Dr. Merchant: Fellow members of the Salesmen's Association: I deem it a privilege to address you as fellow members, for several months ago through some special dispensation — I don't know how it happened — I was elected to active membership in this Association. I want to emphasize the word "active". Those who attend the Miami Valley Meetings know who does the work down there, and who is doing it here today is obvious.

It is only a few years ago that I was connected with the Federal Trade Commission in Washington. At that time when I recall I used to be out after the associations in the paper industry with a big stick, I little realized that some day I would be a member of one of these associations, but that is the case today.

I think this Salesmen's Association is a wonderful thing. I don't know who conceived the idea, but whoever did deserves the highest commendation. I don't know of any branch of the paper industry that needs an association more than does the salesmen's branch. You have an opportunity in the Salesmen's Association to elevate selling methods, develop esprit de corps and, as I hope I shall point out in the course of my talk, add stability to the paper market by collecting and analyzing the facts.

Down at Dayton I go under the title of statistician. Now I perhaps ought to explain a little just what that means, otherwise you may get a wrong impression of some of my remarks. It brings to my mind a little story. A man met a friend of his, and he said, "I have a new dog."

The man said, "You have? What is his name? What do you call him?"

He said, "I have named him Entomologist."

The man said, "What have you named him that for?"

"I don't know. It is a good name."

"Do you know what an entomologist is?"

"No."

"Well, an entomologist is a collector of rare species of insects."

The man with the dog replied.

"That is just what my dog is."

A statistician is supposed to compile figures, for one thing, and analyze them, for another. I met a friend in the elevator the other day, and he said to me "You are a statistician, are you not?"

"Yes."

"You compile figures, do you?"

"Yes."

"Then you must be a figure head."

I don't mind being called a figure head if you put the emphasis on the word "Figure", but that definition might mislead you a little. I don't propose today to recite a lot of figures to you about business conditions, or about the paper industry although my head may be full of them. What I have in mind to do rather is to keep school for a few minutes and see if we can analyze some of these fundamental principles that underlie the trend of business and thereby get our bearing a little better. There never was a time when it was more important that those in charge of sales as well as the salesmen themselves should have accurate information regarding business conditions; the sales executives in order to avoid the costly mistakes that arise from bad judgment, and the salesmen themselves in order that they may more intelligently assist and advise their customers regarding their purchases. For this reason I have consented to talk to you on the subject of "Business Forecasting". My purpose is not to enter into a detailed forecast of what is going to happen during the next year or two, but rather to analyze business conditions as statisticians are accustomed to do, so that you can learn how to do your own forecasting.

As you all are probably aware, this year has been an open season for business forecasters. There never was a time when the experts on business conditions disagreed so widely as they do today. Right now you have forecasts for next year ranging from a big boom year on the one hand to a year of severe depression on the other, and these predictions are not coming entirely from amateurs, they are coming from college professors, business services, and men who give a lot of time and study to this thing. For this reason you can see it would be rather rash for me to make positive predictions about what is going to happen. What I intend to do is to analyze the situation for you, pointing out the favorable factors and the unfavorable factors, as they exist today without any coloring, and let you come to your own conclusions.

The first thing I want to talk about especially is the subject of business cycles. On all occasions like this you always find me expounding on the subject. Some of you may think I have wheels in my head, or that business cycle is my middle name, but it is not. This economic phenomenon is something we must all understand, if we are going to interpret correctly what we read in the papers and hear daily about business conditions. There is no way to really get your bearings, to get the proper perspective of economic developments or to forecast intelligently except by understanding the principles underlying business cycles.

Now the word business cycle does not mean as much as many people attribute to it. About all the word means is that you will eventually come back to the starting point. We all know it does not need to be

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[1] Address by Dr. E. O. Merchant at the annual luncheon of the Salesmen's Association of the Paper Industry, Chicago October 10, 1923.

proved that business fluctuates from prosperity to depression and back to prosperity, so you can start at any point you want and you will eventually get back to it. That is all the word "cycle" means. It does not mean that these fluctuations or swings of business have any predetermined length or predetermined intensity. If they did, all we statisticians would have to do would be to work out a mathematical formula and sell it to you for ten dollars a head and you could do your own forecasting. The result would be that soon there would not be any swings. Everybody would be so well posted you couldn't have such a thing.

To illustrate a few of the things we know about business cycles, I want to call your attention to the chart here. I made it in the form of a circle to illustrate the word cycle, as I have defined it. Every cycle can be said to have four phases. The first phase is one we call depression, the second is revival, the third is prosperity, and the fourth is liquidation. We don't always know exactly where the dividing line is between any two phases, but the ear-marks of each are sufficiently clear to enable us to locate ourselves quite closely. An important thing I want to bring to your attention is this: that the business cycle always goes through these phases in this order, and it never goes in any other order. It does not do any cutting across the lot or any reversing of the direction. It goes around continually in this way, so when you are in one of these phases you know that sooner or later you are going to get into the next one.

Now the reason for this is that there are always forces generated in each one of these phases which carry us out of that phase and into the next one. When you are in a period of depression, you all know what the characteristics are; you can recall them from 1921. Production is less than consumption because there are big inventories that have to be used up. There is general unemployment. Sometimes if the depressions are severe we have bread lines. There is an accumulation of funds which causes money rates to decline and when money rates decline long enough you are bound to get a rise in bond prices. These are all characteristics of the period of depression.

Now, then, after consumption has used up all of the stocks that have been accumulated in a period of prosperity, new buying starts, and as the new buying gets under way plants open up, employment increases, more men go to work and spend their wages for more goods, etc. In this way the revival gains momentum.

There are usually two forces, either working singly or together, that help to swing us out of a period of depression into a period of revival. One is favorable agricultural conditions which increases the buying power of the big farming population. As soon as the farmers get their money from the harvests they start buying and that stimulates the revival. The other force is new building, large expenditures for new building. In the last period of depression it was new building, the building boom, that pulled us out of the depression and not the agricultural situation, for that was unfavorable. It did not help us much, if at all, but the building boom did. That was the main economic force that brought us out of the depression of 1921 into the period of revival in which we were traveling during the year 1922. It was supplemented by a heavy demand for automobiles and also a heavy demand for railroad equipment. During that period of revival we had general expansion of business activity, rising prices, rising costs, rising money rates, and also rising stock prices, etc. We got up sufficient momentum in the period of revival to go on into the period of prosperity, and we have been in this period of prosperity during the present year, 1923.

What are some of the characteristics of a period of prosperity? You all know them. They were present in exaggerated form in the boom of 1919 and 1920. Production exceeds consumption, causing an accumulation of stocks. You have rising wage, rising costs and rising prices; you have inefficiency of labor and also inefficiency of management. You have rising money rates which causes security prices to go down. You have also a wave of optimism. Everybody thinks the prosperity period will last forever, and goes ahead expanding on that basis. You have as a result an over-expanded plant capacity. Eventually these unfavorable factors or disease germs, if you want to call them this, get strong enough to overcome the favorable factors and force us into a period of liquidation.

Late last fall and the first part of this year when we were entering the period of prosperity, everything was going according to Hoyle and the work of the statistician was easy. We had expanding business activity, rising prices, money rates went up somewhat, and it looked as if we were going right on through the period in regular fashion. Then about the end of March something happened. We got off the beaten path before we realized it and since then nobody has been able to forecast with any great degree of certainty what is going to happen.

I want to add at this point that there are times, and this is one of them apparently, when enough unusual influences can develop to confuse the situation and when that happens it is very difficult for any one to forecast with absolute accuracy. That is what has been the situation since the last of March, and that is the reason why the business services and economists are so far apart in their views. They have no guideposts to steer by.

Now, what were the forces that brought about the unusual situation? Well, I think the most important one was the invasion of the Ruhr District of Germany, by France. As long as Europe was producing, buying and selling goods, even with conditions as bad as they were, she didn't have much of a retarding effect on our own prosperity, but when France invaded the Ruhr and the Germans retaliated with passive resistance, the production of sixty-five million people was soon curtailed and when you curtail production you curtail buying power. People can't buy unless they can sell and so a great market for the world's commodities was restricted. It was not long after that happened until there was a business reaction, and declining commodity prices, not only in this country but in England and other countries. That was one of the unexpected forces that came into the situation and that is one of the factors that I think every man who is trying to look ahead and forecast correctly, must watch very closely from now on.

The Germans have given up passive resistance as a government policy, unconditionally, but of course the damage cannot be immediately repaired. A good many of the skilled workmen and also the managing ability that operated the Ruhr factories are either in jail or have left the district, and it is going to take some time to build up industrial organization again, get the factories running, get the people working, and restore the buying power of that district

The German government is gradually weakening under these unusual and unsettled conditions, and the Reds on the one hand and the Monarchists on the other are exerting every influence they can to get control of the Government. What is going to be the outcome nobody knows. The German government may collapse perhaps; or in a short time there may be a settlement of this whole situation. If this happens, then we are going to see increased buying of our commodities again by Europe, and this is going to be a stimulating factor, in the business situation. So all we can do, gentlemen, regarding this factor, is simply to watch the news closely. Don't be misled by the headlines but try to get the real facts on the situation.

Now, the second factor that came into this period of prosperity and helped to cause the reaction, I think, was the propaganda against inflation which was circulated last Spring. We have enormous gold reserves as a result of heavy importations during the past two years. These gold reserves of the Federal Reserve System can be multiplied at least ten times in the expansion of credit, if necessary. Because of this fact some people feared that we were running into a period of inflation last spring. They got scared, and started the propaganda which was widely circulated, to head off inflation. It immediately reversed business sentiment which up to this time was growing optimistic. Business sentiment changed over night and became pessimistic, a very unusual occurrence in a period of prosperity. You don't often see such a thing happen. Now, of course, there can be an honest difference of opinion, but I am inclined to think that these men who started the propaganda were unduly alarmed. I think that it did more harm than good, but unquestionably it did some good. During the last quarter of 1922 and the first quarter of 1923 there was some over-production. Wages, costs and prices went up too fast in some cases. There was some accumulation of inventories. When the situation changed and we entered the period of business reaction, production was curtailed and stocks were reduced. We got ourselves in a few months on a much sounder basis than existed at the end of March.

After every severe business depression such as we had in 1920 and 1921, business sentiment is especially sensitive to bearish suggestions and therefore it is unwise in my opinion to circulate suggestions of this kind.

I can further illustrate the course of business during recent years by reference to these charts here, the Harvard Index Chart, the Brookmire Forecasting Chart, and the Price Index Chart. The black line on the Harvard chart represents general business. You can see how high it went back in the boom period of 1919 and 1920, and how quickly it came down in 1920 and part of 1921. During the rest of 1921, the curve was running along in the depression period. In 1922 it started to climb upward into the period of revival and then on up into the period of prosperity until the reaction occurred last spring. Then the curve turned downward for a few months. The bottom was reached in July and in August the business curve started up again.

MR. GIBSON: What is the date of the upturn of the business curve?

DR. MERCHANT That is the month of August

MR. GIBSON: Is that the low point?

DR. MERCHANT: The low point was July. I haven't the September figures yet. I think they will show that the trend is well held if not still upward.

There are some other evidences that this business reaction came to an end in July, and since then business has been on the up-grade again. I want to call your attention to this index chart of commodity prices including Dr. Bradstreet's U. S. Bureau of Labor statistics and Prof. Fisher's weekly index. You will notice what happened to those curves in the spring of 1923. They all went down together, but in August and September these indexes turned upward again, indicating that the reaction was over.

This Brookmire forecasting chart also illustrates what has happened this year. The theory of this chart is that the forecasting line should turn about one month ahead of the speculative stock line and seven months ahead of Bradstreet's commodity price line. As an evidence of the fact that conditions were all upset this year, the speculative line actually turned down before the forecasting line did, and the commodity price line turned about as quickly. The forecasting line went down a little but would not stay down. After two or three months it turned up again.

Consequently the Brookmire service is the most optimistic of all the business services today. These people say that this revival of business is going to continue for some time, perhaps well over into 1924. They are quite confident that their forecasting line is supporting this prediction.

The Evidence of Fundamentals

Now, let us take a look at the fundamentals of business and see where we stand. Consumption is running on a very high level today. It has been on a high level during the whole year. As positive evidence of this fact look at the weekly freight car-loadings, which show the volume of goods going through the channels of distribution to the ultimate consumer.

I didn't have imagination enough when this chart was drawn for the line of total car-loadings is already off the chart. This middle line on the chart is one you will all be interested in for it represents the miscellaneous, L.C.L. and package freight car-loadings. In this group is included all those goods that are carried in packages, cartons, containers and wrapping paper and you see that this line is still going up.

Another evidence of the high level of consumption is furnished by the figures on retail sale published by some of the Federal Reserve Banks. The figures for cities like New York and Chicago show that the volume of retail sales is keeping up; it is breaking all previous records. That is natural, for everywhere everybody is well employed and getting good wages and if you will compare the wages paid today with the cost of living you will find that the workers have a bigger margin of buying power than they had in 1920 when prices went up as fast or faster than wages. This year prices are being kept down while wages have gone up, and the margin of buying power has been increased.

MR. GIBSON: Before you get off the subject of car-loadings, how many weeks has it been since the car-loadings have run over a million cars a week on your chart? We can't see the figures.

DR. MERCHANT: The million carloadings started in the last part of May and have continued to run over a million cars a week except for three or four weeks where there were holidays like the Fourth of July and Labor Day, and the week the late President Harding died, and one other, I think. The high point last month was about a million and ninety thousand. Now, the high point last year was about a million and fourteen thousand, I think, and in 1920 it was a million and eighteen thousand. Anyway, we are considerably above the previous high records.

The second fundamental factor is that inventories are not unduly large. During the last quarter of 1922 and the first quarter of 1923 there was a tendency to expand inventories. The business reaction we have had since then has caused the liquidation of these inventories, so that today, generally speaking, they are smaller than they were on April first and are generally on a sound basis. Here and there you will still find inventories that are too large. That is true of pig iron for instance. But generally speaking, inventories today are on a sound basis. In other words, there is not a large stock of finished goods to be worked off which would cause a curtailment of production.

The third fundamental factor is that we have a sufficient labor supply to take care of production and the fourth is that we have adequate transportation facilities. You don't realize perhaps how well the railroads are taking care of the enormous volume of traffic today. There is practically no car shortage anywhere. If you go back over the history of this country you never will find an instance where we were in a period of prosperity with so little car shortage as we have today.

The fifth fundamental factor is the money situation. Ordinarily by the time we get into a period of prosperity, money rates have climbed up quite a ways, but on account of the fact that we have had a billion and a half or two billions of gold injected into our Federal Reserve System during the past two or three years, we have a money situation today which is like the situation we usually have back in the beginning of a period of revival. I don't know of an instance in the history of this country where we have had money conditions like they are today. It is an extremely favorable factor in the present situation. These are some of the fundamental factors which every economist, statistician and business service, watches closely and it is for the reason that these factors are all so favorable that services like the Harvard and Brookmire and Professors like Fisher of Yale and bank presidents like Reynolds of Chicago say that there is no possibility of any severe depression taking place next year, but on the contrary business is likely to remain good.

Now, there are some unfavorable factors in the present situation and in my position it would not do to neglect to mention them also. One unfavorable factor is the Ruhr situation which I have already described. Another unfavorable factor is the bearish business sentiment that prevails. This year more than ever before it has been a question of psychology. Take the groundwood pulp market as an illustration. The statistics show that we have had smaller stocks of groundwood pulp on hand during this year than ever before, and yet the price of groundwood has not risen above fifty dollars at the mill, whereas in 1920 with stocks considerably larger than this year the price sailed up to one hundred and fifty dollars a ton at the mill without any difficulty at all.

Sugar is another illustration. There is barely enough in existence to get us by until the next crop, but the speculators could not get the price up over ten cents before the public rose up and said, "We are being gouged and we won't stand for it." And the price went down. In 1920 with more sugar available the price soared above 30 cents. It is necessary to give business sentiment more than usual consideration at this time. When business sentiment is bearish as it is now, business men will not use this big fund of available credit to expand their business. They are afraid to. Business men will not go ahead and buy for the future; they will only buy from hand to mouth.

Another unfavorable factor is the surplus plant capacity. You all know that following the boom of 1919 and 1920 plant capacity was very rapidly expanded in almost all lines of business, and today we are still paying through the nose for these foolish excesses. This surplus plant capacity along with this bearish business sentiment makes it very difficult for manufacturers to get their prices up in line with their costs, consequently you will find all through industry today concerns doing a record volume of business, with nothing to show for it. That is the reason why since last March we have had a bear market in industrial securities. Manufacturing concerns are not making the profit they ought to be making on their volume of business. Competition is too keen on the one hand to allow them to raise their prices, and the sentiment of their customers is too bearish on the other hand to permit them to raise their prices.

Then along with the surplus plant capacity we have had a smaller export market this year. If we had had a big export market we could have disposed of most of our surplus and run our plants to capacity, but that was impossible with small exports. On the other hand, imports have been large. We have been getting some heavy importations of commodities into this country in spite of the tariff barriers and these are competing with the product of domestic manufacturers. If this goes far enough it will cause some of our industrial concerns to shut down, throwing their men out of work.

Some people regard the coming presidential election as an unfavorable factor because of the radicalism that is rampant among the farmers. So those services like Babson, that are bearish on business have some basis as you can see, for their position. I have tried to set forth both sides for you, so that you can see what the picture is. The present situation is not a one sided one; it is a two-sided proposition with both sides fighting for supremacy. This spring for the time being the unfavorable factors had the upper hand, but since July the favorable factors seem to have regained their former position and we are once more going in the right direction.

The paper industry is a cyclical industry; that is, it fluctuates about in line with general business. When times are prosperous the paper industry is prosperous; when times are bad the paper industry is bad, correspondingly.

I know that I don't need to prove that point to you, but I have made a chart showing the production of the four largest grades of paper, newsprint, book, wrapping and paper board in comparison with the Harvard business curve. These production figures corrected for seasonal variation, fluctuate about in line with the Harvard curve Whatever the Harvard line does these production curves do also. Since the paper industry is a cyclical industry we get the same tendencies that we do in general business; in other words, in a period of prosperity production exceeds consumption and stocks are built up and in a period of depression consumption exceeds production, while the stocks are being used up. To illustrate that point I have placed on the chart a line for newsprint consumption to compare with the curve for production. During the year 1920 the production line was above the consumption line and stocks were built up. In 1921 the position of the two lines was reversed, while the stocks were used up during 1922 and 1923 both lines climbed upward together showing a healthy condition. The same thing would undoubtedly be true of all the branches of the paper industry if we had the figures to show it. I think it is probably true also that greater variation between production and actual consumption exists in the case of those grades of paper distributed through jobbers than in the case of the grades of paper distributed directly, for the jobbers constitute an intermediate reservoir of stocks which expands and contracts according to changes in conditions. When the jobber starts to liquidate his stocks he stops buying entirely for the time being. That throws your production way down while your consumption is going along at a steady pace.

If we trace the history of the paper industry through the past few years I think that perhaps it may help us to see what we can do as an association of salesmen to help stabilize conditions. You all know what happened in the paper industry in 1920. Buyers were out after paper and were willing to pay any price for it. The demand was tremendous. It looked like the mills couldn't take care of it. The salesmen were as badly deceived by appearances as their executives. They thought they had the world by the tail, selling was pretty easy. When the smoke cleared away it was found that everybody was stocked up with paper; the mills were stocked with raw materials and new plants were being built everywhere. When we came into this period of liquidation and depression these stocks had to be used up and while they were being used up production was less than consumption. During the year 1921, a salesman couldn't sell a customer a week's supply of paper to save his neck. But after we entered the period of revival, buying picked up again and during the last quarter of 1922 and the first of 1923, business was generally pretty good in the paper industry; production was expanded, buying was active, and I think if we had all the facts to show it some overproduction and some increase in inventories took place. Then when the sudden reaction came and business sentiment was reversed, those inventories were reduced and while that was going on the orders necessarily were few and far between. Consequently in some branches of the paper industry conditions were quite dull this summer.

The paper industry today like business in general is still paying for the unnecessary expansion of plant capacity following the boom of 1919 and 1920. It is also experiencing increasing imports and decreasing exports in some grades.

If, as now appears quite certain, general business is on the up-grade again, we can all be sure that the paper industry will go along with the rest of the procession. If we have better business this fall and winter generally, the paper industry is going to share in it.

So, to bring this talk to a conclusion, the message I want to leave with you is that if you gentlemen in this association will go to your customers and tell them that conditions are essentially sound, and that there is no reason for all this timidity and apprehension, you can help turn the wheel in the right direction Let's go out from this meeting, put our shoulders to the wheel and "Push" it over

PULP AND PAPER EXPORTS IN SEPTEMBER

The regular report of the Canadian Pulp and Paper Association states that the total value of the pulp and paper exports from Canada for September was $11,715,869. This was a declin from the previous month of $1,579,400 but an increase of $1,393,586 over September 1922.

Details of the various grades exported are given below:

	September 1922		September 1923	
	cwts	Value	cwts	Value
PAPER				
Newsprint ..	1,591,445	$5,632,758	1,818,591	$6,870,190
Book Paper	4,675	37,759	5,199	40,948
Other Paper and Manuf's ..		574,097		653,113
		$6,244,614		$7,564,251
PULP:				
Sulphate . ..	270,053	825,789	234,439	761,695
Sulphite Blchd.	228,190	933,358	225,829	929,121
" Unbleached ..	563,068	1,310,640	456,819	1,282,808
Mechanical	739,364	1,017,882	681,595	1,177,994
	1,800,675	4,087,669	1,598,682	4,151,618

The distribution of these exports in September was as follows:

To:

	Paper	Pulp	Total
U. S. A.	$7,072,584	$2,954,723	$10,027,307
U Kingdom	190,229	1,095,288	1,285,517
All Other	301,438	101,607	403,045
	$7,564,251	$4,151,618	$11,715,869

Exports of pulpwood in Septmber amounted to 112,366 cords valued at $1,172,814 compared with 94,351 cords valued at $974,568 in September 1922.

For the first nine months of this year the value of the exports of pulp and paper has shown a considerable increase over the value in the corresponding nine months of 1922, the total being $104,636,736 compared with $83,792,893 for last year an increase for this year of practically 25 per cent. Increases both in quantity and values have been shown in practically all grades of pulp and paper and these exports reflect the increased activity of the Canadian mills.

Details for the various grades are given in the following table:

	9 Months 1922		9 Months 1923	
	Tons	Value	Tons	Value
Newsprint . ..	697,924	$49,689,864	839,222	$63,277,966
Book Paper (Cwts)	20,563	149,017	38,422	259,699
Bond & Writing" .	8,151	85,544	17,713	181,139
Kraft Wrapping ..	13,395	2,057,623	15,658	2,369,644
Mechanical Pulp	220,870	6,643,783	248,189	8,222,122
Sulphate	255,220	15,976,507	295,823	19,961,032
Sulphate	108,333	6,658,849	107,637	7,031,961
Total Paper		$54,503,754		$69,421,621
Total Pulp .		29,289,139		35,215,115

Better than exemption or escape from sorrows is grace to bear them rightly.

BRITISH TRADE NEWS

(From Our London Correspondent)

London, Oct. 21, 1923.

The negotiations between the Premiers of the Colonies and Dominions in the Imperial Conference, are running along smoothly. Mr. Bruce, of Australia, has dealt with the question of trading within the Empire and his views are certainly in the right direction. It is up to the Canadian representatives now to drive their arguments home and if they succeed the outlook for paper from Canada in Australia should be more hopeful.

A Novel Idea

In the course of a conversation with a prominent editor of one of the Lancashire textile trade papers, he told me that a Bradford paper merchant, who deals in wrappings of all kinds, organized on his own a most successful exhibition of all the "good things" he had to sell, at the Bradford Wool Exchange, which has a membership of 4,000 wool buyers, sellers, and dealers. The paper merchant sent out an "S. O. S." to his friends and in reply they backed up his exhibits with the finest show of wrappings any wool merchant, or those associated with the industry, could conceive. There was everything to please them, from photographs to the raw material, and my editorial friend observed: "Really, I was astonished." Now this is a little knowledge for the Canadian paper sellers. They have only to find out where the big crowds are in Montreal and Toronto and, with permission, set up an exhibition in charge of a good business talker. I am told, indirectly, that the Bradford paper merchant anticipates a good run of business as a result of his enterprise at the local Wool Exchange.

Another point that is worth mentioning in connection with advertising stunts. I notice several English papermakers are using textile trade papers, commercial papers, and even theatre programmes for advertising their special lines suitable to the trade they are advertising in. My attention was really first drawn to this new scheme by an advertising agent who showed me a firm of carpet makers advertising in a paper appearing daily in connection with shipping, and shipping only. I was told the results were excellent and I am sure the papermakers in England see there is business in extending advertisements to trades they can cater for. I may also state for the information of those who advertise in the "Pulp and Paper Magazine" and the "Canadian Textile Journal" that copies of these papers are always prominently displayed before professional men and all industries right in heart of the City of London, as well as in the various Canadian offices outside the city boundary. These displays undoubtedly bring business to manufacturers in Canada.

The Wembley Exhibition

Various descriptions are appearing in the daily newspapers here about Canada's exhibits at the Wembley Empire Exhibition next year. These write-ups in the Press are naturally creating great interest and it will be a great opportunity for Canadians to show what Canada can do and what Canada is made of. The British papermakers are very busy with their section. The well known firm of Charles Walmsley and Co. will provide a papermaking machine and all the other engineering firms of importance, including Bentley and Jackson, the Harland Engineering Co., Ltd., Mather and Platt, and Vickerys, will contribute their share to augument the papermaking machine. The sulphite pulp will come from Canada, the Riordon Company having consented to be responsible for the raw material. I can assure all Canadians this is going to be a "great show"—a great shop window of the Empire, as it has been called. Of course, no efforts are being spared to advertise the exhibition. Bodies of trade, weekly, daily, and technical newspapermen, are constantly being invited—and entertained—to the Wembley structures in course of erection, as a result of which descriptive reports are sent to all parts of the world. The exhibition will consequently draw people from distant lands.

Pulp and Paper Markets

There is still a dullness in the British paper industry. Exports are well maintained, but the domestic demand is poor. Thr is a good deal of "talk" about prices for certain qualities of papers reaching a higher level, but at present it is only "talk." The position of some of the mills is reflected in their reports. "No dividends" makes melancholy reading for shareholders and that is the story a good many of the British mills are now printing.

The pulp market is not active. Business transactions are on a small scale and prices are unchanged.

Some British Patents

The patents list for this week contains the names of W. Porritt, Glenside, New Mills, Stockport, and R. Marxe, 35 Finsbury Square, London, who deal with a pulp invention they have introduced. They say that in the reduction or disintegration of rolled sheets of wood pulp, waste paper, boards, and similar materials, the laps or the like in the dry state are fed by a continuous apron and feed rollers to obliquely set saw blades which, cooperating with stationary teeth or the like, tear the material into irregular shaped pieces. These pieces then fall through the hopper of a disintegrator having revolving pins and stationary pins. The comminuted material is then transferred by a pneumatic blower through a pipe line having valves to beaters, or to a mixing chest, where it may be mixed with size, loading, and color, and passed to one or more continuously acting refiners.

A T. Masterman, Mill House, Woodburn Green, Buckinghamshire, has a new waterproofing paper in the list. The invention is numbered 202,432 in the British patents office, London, and is dated May 25, 1922. (No. 14764), (class 96). He refers to the addition to pulp of an emulsion of resin, soap, and wax, subsequently precipitated on the fibres by alum. The materials are retained in the emulsified condition and a harder and more waterproof product is obtained by the addition of a polymerizing agent, e. g., formaldehyde, etc.

Swedish Pulp

Reports have reached London this week showing the Swedish pulp position. The position may be summarised as follows:—

Sulphite	20 per cent unsold
Sulphate	10 per cent unsold
Groundwood	10 per cent unsold
" (dry)	greater part placed

It is stated that the demand for groundwood of all kinds is lively and that a large number of orders for 1924 have already been placed.

Pulp from Russia

Things are moving fast in Russia. British firms have purchased (in one order) £500,000 worth of timber and now the wood pulp is arriving in some of the Scottish ports through the Russo Norwegian Navigation Company and English ports from Siberia and other pulp producing centres. American firms are also negotiating in Russia about pulp and timber and the Russians are encouraging business by introducing a gold currency.

Canadian Pulp

Some fine shipments of chemical and groundwood are still arriving under contracts. The shipments are unsettling European consumers, say the Norwegians, but any excuse is better than none. Scandinavia to some extent is feeling a "cold draught."

The Decker Process For Cooking Sulphite Pulp

The Decker Process can be used in any industry where cooking under pressure takes place. In the paper industry this applies to chemical pulp, sulphate, soda and sulphite, but today I shall only discuss its application to sulphite and only to direct, or Ritter Kellner cooking.

I shall not take your time in discussing the standard methods now used except to establish in our minds what is the general procedure. After filling the digester with chips and acid, steam is admitted at the bottom of the digester. When the pressure is reached we relieve the digester, cool the relief and return it to the reclaiming tank for strengthening of the system acid. After blowing the cook this cycle is repeated.

This method, which to my knowledge has been in general use for nearly fifty years, has gone through a natural development towards the saving of wood and chemicals and most of us feel that we have reached a certain degree of perfection judging from standard results obtained both here and in Europe.

If we search the patent records we find that there has been a good deal of thought and work put on methods for saving steam in the sulphite process and naturally along the line of utilizing the waste heat in the relief. We find that it is proposed to pre-heat the acid with the relief in closed tanks and I have personally seen mills where part of the liquor was transferred from a digester ready to blow into one just charged. The fact that these methods are not in general use is a proof that they have not been practical and I think I am safe in saying that the Decker Process is the first successful method where all the waste heat in the relief is utilized. Like myself you probably feel that you have figured on doing this yourself, some of us may even have tried it, but we did not get results, probably because our companies did not give us the encouragement and support that Mr. Decker received from his principals, Price Brothers & Co., Limited.

The simplest way to understand the Decker Process is to regard the digester which is charged with chips and acid as the reclaiming tank. Instead of cooling the relief from the other digesters and using it for building up the system acid in the reclaiming tank, this relief, instead of steam, is injected hot into the bottom of a fresh digester. By a simple arrangement of valves and pipes the relief lines are connected with the bottoms of all the digesters in such a way that the relief can be injected into any digester. No steam is used during the injection period but the temperature of the digester contents is raised by the heat stored in the relief gases and liquor. If this is carried out right we will see that no relief is returned to the acid tanks and we then come to a point where we charge the digester with system acid and the reclamation and "blowing up" of the acid takes place in the digester itself.

It is plainly seen that the injection period must be the same as the spacing time. If the digesters are spaced four hours apart the injection must also last four hours to give the other digesters a chance to get rid of their relief. However if a rest period is used during the cooking this can be somewhat modified.

In a mill with only two digesters it will be seen that the injection period must be of the same duration as the relief of the other digester. This is of course out of the question as for an eight hour cook with a six hour relief the cooking time would be increased by six hours. In this case we must either use the reclaiming tank part of the time, or handle the relief in another way which I shall bring to your attention at some other time. In mills with three or more digesters we can arrange the injection period to suit all conditions of relief, but as far as we know now, it will probably be necessary to increase the cooking time, or steam to steam period in case of quick cook mills. After the injection is finished the digester is cooked in the usual way.

We shall now consider what we accomplish by the injection:

1st. We save all the steam needed to bring the digester contents up to the temperature reached during the injection.

2nd. During the injection period the acid is being strengthened gradually so that the free SO_2 is much higher after the injection than when the cook is started and nearly 50 per cent. higher than we have with a standard cook at that period.

3rd. We save expensive and troublesome reclaiming systems and keep in our storage tanks only a comparatively weak systemacid instead of the corrosive and "elusive" reclaimed acid, if you will allow me to use that expression.

I beg to refer to the report from the sulphite mill of Price Brothers & Co., Ltd., Kenogami, P.Q., which was published by Mr. Hawkings their chief chemist in the "Pulp and Paper Magazine of Canada" and in the "Paper Trade Journal" for Sept. 27th, reprints of which you have received. This is the third test taken on the Decker Process during the last year and all tests show nearly the same results. I had the pleasure of witnessing this test last July and can assure you that every precaution was taken to insure a fair comparison between the two cooking methods with and without injection. We can readily understand the saving in steam, but I am at a loss to explain the immense increase in yield. This process is now being installed by Fraser Companies, Ltd., at Edmundston, N.B., and it will be interesting to see what savings will be reached there. This mill is equipped to check all savings as its product is dried and weighed and a test run of several weeks duration should be correct.

I am sure that the efforts of Mr. Decker and his associates are appreciated by the industry and that the generosity of the Price Bros. & Co., Ltd., in publishing the results and giving the paper industry in general the benefit of this new development is an outstanding

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[1] Paper by O. L. Berger, G. D. Jenssen Company, opening discussion at the meeting of the Northeastern Division of the American Pulp and Paper Mill Superintendents' Association, at Groveton, N.H., October 6th, 1923.

example of the co-operation which is so seldom found in other industries.

The Superintendents Association has done much towards developing this co-operation and in closing I wish to congratulate you on your sincere efforts to develop your mill methods not only for the benefit of your own mill but for the paper industry at large.

* * *

Following Mr. Berger's paper a number of questions were addressed to the speaker, who explained that it is impossible for any gas or acid liquor to get into the steam boilers, as there is no connection between the relief line and the live steam line. He also said that, in his opinion, the time of cooking of one digester would not be delayed in order to accommodate the relief from another if larger relief lines were used. This is being done in the Edmundston installation. It was also brought out that the extra overhead in equipment, due to decrease in production caused by longer cooking time should be considered, while the increased yield, from the standpoint of conservation of wood supply, would be a large factor in favor of the Decker system.

TO MAKE PAPER SOON AT KENORA

Development work in connection with the first unit of the newsprint mill of the Backus-Brooks Company of Kenora, Ontario has progressed to a point where the company expects to have its first paper machine operating in December. The machine, as large as any in the world, is being built by the Dominion Engineering Works.

It is the intention to build a sulphite pulp mill soon after the paper machine is in operation. At present the mill has a capacity of 80 tons of groundwood pulp, which is sufficient for 100 tons of newsprint that will be turned out by the new machine. The sulphite pulp will be shipped in until this mill has been completed. It is planned to add 100-ton units until the mill has a capacity of 500 tons or more of newsprint daily.

Power is being supplied by what was formerly a municipal hydro-electric plant at Kenora, and which has been brought to a point where it is capable of producing between 10,000 to 12,000 horse power. The Backus interests also control the water power at the Norman Dam situated less than two miles from Kenora. Negotiations in regard to water levels on Lake of the Woods, which will have an important bearing on the power capacity of the Norman Dam, are proceeding between Canada and the United States. As soon as settlement is reached Mr. Backus proposes to construct the power. The combined output of the two plants, both located on the Winnipeg River, will be sufficient to operate pulp and paper mills with a capacity of about 400 tons daily.

BROMPTON RETIRES BONDS

The decision of the Brompton Pulp & paper Company Limited, to retire the outstanding amount of $104,000 of first mortgage sinking fund 6's due 1927 was brought about by the fact that the sinking fund of the amount. Rather than to leave but a small operation called for retirement of the greater portion amount remaining it was decided to wipe out the issue entirely, especially in view of the fact that such action was financially possible at this time.

BELGO SOON AT 400 TONS

To meet the demands of the extra paper tonnage it has been found necessary to increase the groundwood output of Belgo Canadian Paper Co. and two new groundwood machines were brought into operation about a week ago, increasing the groundwood pulp capacity of the mill by about 40 tons a day. A portion of the extra pulp is now being marketed as such although the full amount will likely be used in the Belgo plant when the last of the new newsprint machines is running. Something of a record was set up in putting in the new groundwood machines as the contract was only let during the month of August. Another addition to the company's properties that has just been completed is a spur track to bring in logs by rail. The logs brought in this manner supplement the supplies of pulpwood floated down the St. Maurice River. The spur track is something new in pulp and paper manufacturing and it runs out over the river where the logs are dumped into the water and carried up the usual system of conveyors to the sawroom and thence through the mill.

The big machine built by Chas. Walmsley & Co. is rated at 75 tons, but has produced more than 96 tons in one day. Another 3-roll machine built by Dominion Engineering Works. is being installed and will start production towards the end of November. This will bring the production of the company very close to 400 tons of newsprint daily.

PRESIDENT BIERMANS RETURNS

Hubert Biermans, president and general manager of the Belgo Canadian Paper company, returned from the continent a few days ago. His trip abroad was largely of a personal nature but while in Belgium Mr. Biermans is understood to have cleaned up the final details in the transfer of the ownership of the company to Canadian hands. This ownership is now very widespread, a broad distribution having been given among Canadian investors to the issues of preferred stock and bonds of the company.

HAS $1,000,000 CLAIM AGAINST BECKER & CO.

In connection with the large contract made last year between the Saguenay Pulp and Power Company and Becker & Co., the London, England, firm which has recently gone into liquidation, it is reported that the Saguenay Company, through its subsidiaries, has a claim of approximately $1,000,000 against Becker & Co.

The character of the claim arises out of the contract, and most of it is in connection with a readjustment which allowed for a higher price than has been originally agreed upon. On this account it does not represent in its entirety any actual loss that would be sustained by the Saguenay Company, but a further profit that it would have made if everything had gone along without any unexpected development occurring.

While the claim is directly against Becker & Co., the Saguenay Co. has also a right to considerable portion of the amount from customers who have been supplied through the agency of Becker & Co. The Canadian interests here believe that the company is in a strong legal position with the customers that it supplied and most of the claim will be obtained direct from the customers, rather than from Becker and Company as agents.

Quebec Safety League Formed

With a luncheon in the Windsor Hotel yesterday the Quebec Safety League, as a section of the Canadian National Safety League, was formally launched. The luncheon, given by the national organization, was presided over by Sir. John Gibson, Ex-Lieut.-Governor of Ontario, and was attended by over a hundred representatives of leading industrial and club organizations of the city, together with representatives of the city council, the police force, the fire brigade and other organizations interested in public safety.

With Sir John Gibson at the table of honor were Col. R. L. H. Ewing, D.S.O., M.C., A.D.C., as personal representative of the Governor-General, Hon. E. H. Armstrong, Premier of Nova Scotia; Hon. James Murdock, Minister of Labor; Paul E. Joubert, C. W. Price, Jos. Daoust, Dr. R. M. Little. New York; Dr. P. E. Doolittle, Major J. A. Duchastel, H. J. Elliott, K. C.; R. S. White. Others at the meeting included Chief of Police Pierre Belanger, Chief Gauthier, of the fire brigade; Mayor P. W. McLagan, of Westmount; Mayor James Ballantyne, of Montreal West, and the mayors or other representatives of a half dozen other municipalities of the Montreal district, with a delegation from Quebec, and guests from Sherbrooke, Three Rivers and other cities of the province. A letter of regret was received from E. W. Beatty, president of the C.P.R., that he could not be present, although that company, as well as the Canadian National, had representatives, Mr. Beatty being represented by E. A. Cunningham, efficiency expert, with other officials, while Sir Henry Thornton was represented by G. T. Bell, executive assistant to the traffic vice-president, and Mr. J. A. Hills, assistant to the vice-president in charge of operation and construction.

It was unanimously decided that the Quebec Safety League should be organized, and a resolution of the meeting was adopted to this effect, together with a resolution outlining the intentions and work of the league.

Officers Elected

On motion of H. V. Duggan, seconded by E. A. Cuningham of the C.P.R., the following officers were unanimously elected: Hon. president, Lord Shaughnessy; hon. vice-presidents, Lord Atholstan, Hon. L. A. Taschereau, Premier of Quebec, Sir Charles Gordon, Hon, Athenase David, Provincial Sec.; Chief Justice Martin, Hon. Mederic Martin, Mayor of Montreal; Leon Lorrain, A. Rinfret, Eugene Tarte, Hon. Smeaton White, Ald. J. A. A. Brodeur, Gen. Sir Arthur Currie, P. E. Du Tremblay, Paul E. Joubert, Ed. C. Tanguay, Hon. Frank Carrel. (Quebec), Lt,-Col. Robert Starke, J. B. Gagnon (Quebec), Dr. P. E. Doolittle.

Zephirin Hebert, ex-president of the Board of Trade and president of the Canadian Club, was animously elected president, while an advisory committee was agreed to, consisting of the mayors of fifteen Quebec cities and towns.

An executive committee was elected as follows; Dr. W. H. Atherton, M. P. Atwood, G. H. Cam, E. A. Cunningham, A. O. Dawson, M. Desaulniers, Rev. Dr. Dickie, J. O. Daoust, H. J. Elliot, K. C.; F. S. Fallis, M. P. Fennell, jr., J. J. Fitzgerald, H. J. Fitzgerald, Ed. Quinn, Col. J. E. Hutcheson, W. E. Henthorn, T. C. Kirby, R. H. McMaster, George A. McNamee, John W. Ross, P. R. Walters, F. G. Webber, N. W. Warren, Fred W. Stewart, H. V. Duggan, J. T. Foster, James Cleghorn, this executive committee to have power to add to its members.

A suggestion was made by Mr. Goff Penny, on behalf of the Quebec delegation, that the list of officers was somewhat top heavy with Montreal men. This was replied to by Paul Joubert and H. V. Duggan that the list so far was tentative, in order to get the organization under way, and that local committees would be appointed later on to take charge of the work in various districts. The provision that the executive had power to add to its numbers also meant that representatives of each district would be later on included.

Mr. Penny suggested that this be done, and that provision be made that at least once a year the executive should meet at the headquarters of the various leading districts of the province, which was approved, and left to the executive for further work.

Outlined Work Done

Many speeches were given during the inaugural luncheon. Sir John Gibson outlined the work that had been done by the Ontario Safety League, and the splendid benefit it had been in that province, not merely in preventing fatalities and accidents, but in an economic sense.

Col. R. H. L. Ewing, A.D.C., as representative of His Excellency, contented himself with referring to the keen interest Lord Byng took in anything for the good of the people of Canada. As representative of His Excellency, Col. Ewing appeared in dress uniform.

Dr. P. E. Doolittle, as vice-president and one of the founders of the Ontario Safety League, followed, and told of the excellent results of their work in Toronto and Ontario.

Addresses referring to the general work and uses of the "Safety First" movement, both in industry and ordinary life, were given by Dr. R. M. Little, of the State Department of Education, Albany, N.Y., and C. W. Price, of the Elliot Service Co., New York.

J. F. H. Wyse, general manager of the Canadian National Safety League, gave a talk on the financial aspects of the work, pointing out the savings that accrued to industry and the public generally through the work of the league. He, however, emphasized the fact that finances were necessary for the work. In Ontario these had been furnished by the provincial Government, with the various municipal governments, and the railway and other large corporations interested in such safety methods. The organizers here, he said, had been assured that similar support would be available in this province, while the general public would be relied on to support a work so much in their interest.

Paul E. Joubert then took the chair, and a series of resolutions were adopted unanimously, electing the officers already named, agreeing to the name and constitution of the league, and paving the way generally for further work in this direction. Before adjourning a vote of thanks was passed to Dr. Doolittle, J. F. H. Wyse and other Ontario officials who had come to Montreal and done so much to organize the Safety League here.

A meeting of the Executive Committee of the new Province of Quebec Safety League was held the next evening at the Old Colony Club at the Windsor Hotel, to prepare plans for their future work, when a tentative slate of committees and officers was presented, to be submitted for approval to a general Executive meeting to be held at an early date.

The chair was taken by the president Zeph. Hebert, while among those present were F. W. Webber, Paul E. Joubert, T. C. Kerby, W. S. Atwood, W. F. Cam, John T. Foster Lt.-Col., Robert Starke, H. V. Duggan, E. A. Cunningham, James Cleghorn, George A. McNamee, J. J. Fitzgerald and Dr. W. H. Atherton.

It was decided that the activities of the league should cover the whole of the Province of Quebec, and that local branches should be organized at various central points, each of which should be entitled to elect representatives on the central executive.

On motion of James Cleghorn, seconded by Paul E. Joubert, it was decided that the provincial organization should comprise an honorary executive and an active executive. Plans for organization were submitted and approved, and a sub-committee to nominate officers and committees was nominated as follows: Chairman, Lt.-Col. Robert Starke, Paul E, Joubert, E. A. Cunningham, H. V. Duggan and Dr. W. H. Atherton. For the permanent work it was decided to appoint various sections, including sections for organizing, educative work, traffic, legal, with a number of sub-committees to look after the detailed work.

The following were added to the general executive committee; Jules Crepeau, J. Duchastel de Montrouge, J. Terreault, Armand Dupuis, Pierre Rolland, A. Fortier, Jos. Laporte, Albert Tetreault, Omar D. Serres, Chief of Police Pierre Belanger, Chief of the Fire Brigade Raoul Gauthier and Dr. Boucher, of the Civic Health Department.

A constitution and by-laws were adopted, which set forth that the organization should be known as the Quebec Safety League; that the head offices should be located at Montreal.

The objects of the league, set forth in the constitution, were:

To protect and safeguard the public, especially children, from the dangers of automobiles, railroads, street railways, and all forms of vehicular traffic on the public highways of this province.

To educate the public through schools, churches, literature and all channels of publicity upon all matters pertinent to public safety.

To minimize the injuring and killing of persons employed in stores, factories, workshops, and all departments of industrial and mercantile activity, by instilling into the minds of employers and employees the full meaning of "safety always."

To co-operate in the prevention of destruction of lives and property by fire, to assist in the enactment and enforcement of all possible legislation for the improvement of public safety, and to encourage and assist the formation of Safety Leagues throughout the province.

PULP AND PAPER EXPORT FOR 12 MONTHS

Canada's exports of wood pulp during the 12 months ending September 30 totalled 17,704,999 cwt., with a value of $46,973,825. For the proceeding 12 months, as set out by the Dominion Bureau of Statistics, the exports of woodpulp were 16,125,538 cwt. value $40,283,920. Exports of pulp wood for the recent 12 months were 1,403,532 cords, value $13,571,733 compared with 910,591 cords, value $9,562,266 in the 12 months ending September, 1922. Exports last month were somewhat below those of August.

Exports of newsprint paper rose to 22,016,217 cwt., value $81,950,919 in the 12 months ending September last, while for the previous 12 month period they were 18,066 956 cwt., value, $66,248,004. September's exports were 1,818,591 cwt. as compared with 2,091,352 cwt. in August.

Largely increased exports of wallpaper, paper board, book paper and writing paper and wrapping paper were also registered during the 12 months just ended. There was a decrease in exports of roofing paper, and of bags, boxes and cartons made of paper. Total exports of paper and manufactures of paper of all kinds for the 12 months ending September totalled $89,743,760, as against $72,220,581 for the previous 12 months.

CLARKE BROTHERS MILL SOLD

First mortgage bondholders of Clarke Brothers, Limited, met in Toronto last Friday, and voted to accept an offer of purchase of the company's properties submitted by a group of Chicago and Milwaukee business men closely associated with the pulp and paper industry. The arrangement provides that present first mortgage bondholders are to receive second mortgage refunding bonds of a new company to be formed, equivalent to their holdings in Clarke Brothers, Limited, now in liquidation, and in addition for each bond held a $50 share of 7 per cent. cumulative preferred stock of the new company. The bonds are to bear interest at 7 per cent., and mature in twenty years.

The American interests will proceed at once with the organization of a new company, which shall have a Dominion charter. On its board will be three representatives of the buyers, three representatives of the bondholders of Clarke Brothers, and a seventh director who shall be independent of either of the parties. The new company will take over the holdings of Clarke Brothers, Limited, finish the construction of the mill, provide working capital, and put the entire plant in first-class operating condition. To provide working capital, a first mortgage bond issue amounting, to $140,000 is being floated, and its purchase by a Chicago trust company has been arranged. The new interests associated with Clarke Brothers' affairs are said to be very strong financially, and it is accordingly hoped that the troubles experienced by the security holders of this company are at an end.

The telephone was invented by a great Canadian scientist, Dr. Bell, and Canada has nearly one million telephones, representing a capitalization of $100,000,000. The telephone companies spend annually for research, the results of which are all about us, a sum greater than the total income of many universities, and the enormous amount saved by the use of the telephone is incalculable.

Woodlands Section

N. S. FORESTER SUPPORTED BY CITIZEN'S GENEROSITY

Nova Scotians interested in the handling and conservation of their timberlands and woodlots will, as a result of the efforts of Frank J. D. Barnjum, have the benefit of expert advice on this vitally important question. Unsuccessful in his attempt to induce the provincial government to secure the services of a chief forester for the province, Mr. Barnjum has, on his own account, engaged O. Schierbeck, formerly chief forester for Price Brothers, Quebec.

Mr. Schierbeck, who is a Dane, was the winner of Mr. Barnjum's $5,000 prize, which was open to world competition, for the best method of suppressing and combatting the spruce budworm, bark beetle and borer. This treatise was printed and given free distribution by Mr. Barnjum and it is now to be found in the libraries of all forest schools on the continent. Mr. Schierbeck is one of the best equipped foresters in North America, as in addition to his high qualification as a forester, he is a forest entomologist and has had a wide experience in nursery work and planting and seeding for reforestation, in addition to being a practical woods operator and fire prevention expert, as well. Nova Scotians should feel greatly encouraged in having a man of such outstanding ability and attainments located in the province.

Mr. Schierbeck passed his examination at the University of Copenhagen, Denmark, after a seven years' course in forestry and since graduating has had 19 years' experience in practical forestry, of which eight years was with the Danish Government Forest Service, eight years being spent in Canada, the past four years of which as chief forester for Price Bros., Company, Quebec, one of Canada's largest, most successful and progressive paper companies, whose limits are equal in extent to one half the area of the entire province of Nova Scotia. During his employment with Price Bros., Mr. Schierbeck has had full charge of all fire protection on these vast limits, giving him a large experience in this now all important part of forest conservation.

Mr. Schierbeck resigned his position with Price Bros. and accepted the offer of Mr. Barnjum to come to Nova Scotia to study forest conditions and possibilities in this province. Mr. Barnjum intends starting a nursery at Annapolis Royal immediately under the direction of Mr. Schierbeck for the benefit of the farmers and land owners of Nova Scotia so that they may be provided with transplants and seedlings free of charge for the reforestation of the waste land on their farms. And in order to demonstrate the benefit to be derived from proper forest management of the farmer's woodlot, a demonstration area in the vicinity of Annapolis Royal will also be set aside for this purpose where interested visitors will be welcome.

Mr. Schierbeck is very much impressed with the possibilities for forestry in Nova Scotia, considering it the most promising in this respect of any province in the Dominion, with its fertile soil, moist climate and intelligent farming population, and with adequate fire protection measures, combined with proper cutting methods, the future of the province would be assured.

BABY FORESTS MUST BE GUARDED TO OFFSET FAMINE

Written by Dr. J. H. WHITE, Professor of Forestry, University of Toronto

Our forest resources will last us a goodly time yet, but it is significant that the curve of our lumber production has had a downward slant ever since 1911. Why travel through to the bitter end before entering upon plans for the future? We might with profit realize on the experience of other people. The economic results of timber mining are inexorable. We cannot escape these results any more than any other nation. Why not look after ourselves, and the work can be done more easily and more cheaply now than later. We are particularly fortunate in that in the main the land itself is publicly owned; our governments do not have to buy it back from private owners, as in the eastern United States, before beginning to grow timber crops.

We Must Spend To Save

By the growing of timber crops I do not mean planting trees, but the putting of forest land to continuous use. The most urgent move towards such a policy is to concentrate still more on the work of protection of our forests from fire. Adequate protection of Canada's forests can never be accomplished with the appropriations for that purpose made today; it will require at least twice the expenditure. It can never be accomplished without the co-operation of every one who enters the woods. And it can never be accomplished without the disposal of logging slash along the more hazardous routes of movement.

But the real expensiveness of our forest fires is less the timber they destroy than the trees they prevent from growing. They wipe out the oncoming forests which would replace our disappearing virgin timber. It is imperative that we give the young growth on our cut-over lands a chance, if we are to have a basis for permanent prosperity, both locally and nationally. We should, without delay, segregate all our large areas of young coniferous growth, designate them as reserved for our future needs, and thoroughly protect them. Of late years there has been a greatly increased interest in the matter of how long our supplies of lumber and pulpwood may last. The information would make little or no difference in our rate of cutting. The timber is mature and only the pressure of price will slow up the consumption. To take an inventory of our timber resources would be of little value unless accompanied by a decision to make use of the estimated duration interval in taking steps to guarantee the next crop.

PULPWOOD COMMISSION HEARING IN OTTAWA

The royal commission charged by the Federal Government to conduct an inquiry as to the possibility of imposing an embargo on the export of pulpwood to the United States has ended its series of inquiries in the Maritime Provinces

Next Monday the commission will start their inquiry in Ottawa, and will spend the week in the capital, where they will hear all that has to be said about the imposition of a pulpwood embargo by the people of that region.

The following week the commissioners go to Toronto.

After having completed their inquiry in Toronto, the commission will cease its labors until after the holiday season is over, and in the early days of 1924 will start the western inquiry, commencing at Vancouver and Victoria, and then winding eastward.

The commission will probably sit in Quebec and Montreal in February.

NEW BRUNSWICK NEWS

Operations in the mills of the Fraser Companies Limited at Edmundston and Chatham are being steadily maintained. Fraser Companies Limited, is a reorganization of the Fraser Company, founded nearly a half century ago by the late Donald Fraser, Sr. During 1921, a deficit of $1,439,639 was experienced. And in 1922, there was a deficit of $259,383. Until 1919, control of the company was vested in the Fraser family, but in that year, an issue of two million dollars in six per cent ten year first mortgage bonds was announced, and in 1921, another two million dollar issue of general mortgage bonds was made, but this time at eight per cent. In 1919, the title of the concern was changed to Fraser Companies Limited, there being extensive lumbering interests as well as the pulp manufacturing interests. The officers of the company are: Archibald Fraser; president; Donald Fraser Jr. vice-president; W. Matheson, secretary; A. W. Brebner, treasurer; W. C. Pitfield and T. Matheson, additional members of the directorate. The operating centre for the pulp manufacturing department of the company is at Edmundston. At this mill the daily production is 120 tons of bleached pulp. The Chatham mill produces half this amount in unbleached pulp.

Never in the history of pulp and paper manufacturing has the low water handicapped operations to such an extent in New Brunswick rivers as at present. In some instances the water has receded so far in rivers that pulpwood is piled high on the banks, and will remain there until next spring. Along the upper St. John River, the depth of water is barely a few feet in many sections. Those operators who did not get out the cut in the spring freshets, expecting sufficient water during the summer and fall have been waiting for the higher water in vain.

Dr Tothill of the entomological branch of the department of agriculture, Ottawa, in testifying before the Pulpwood Commission at Fredericton, stated improved forestry methods are imperative for the extinction of forest pests. He asserts the bud worm is rare in New Brunswick at present, its ravages having been principally felt from 1912 to 1917, when it ceased feeding. He also stated that the forest fires are always followed by boring beetles, and that slash was not responsible for the breeding of forest pests in the main, except in instances where large tops remain. Dr. Tothill said the fires impoverish the soil.

A. E. Hanson of Fredricton, N. B. says the amounts paid for stumpage in New Brunswick are far below what should be paid, and he says this situation has always prevailed.

When he was yet a great way off, his father saw him, and had compassion, and ran, and fell on his neck and kissed him.

QUEBEC FACILITATES HUGE NEW MILL

Ten millions dollars will be spent in the development of timber limits in the basin of the Menicouagan River, in the province of Quebec, within the next few years, according to the terms of a lease which the Government will auction at the end of November, details of which are contained in an announcement made last Friday from the Department of Lands and Forests. The scheme under which the limits will be exploited is also expected to provide a practical solution of the pulpwood difficulties and do away in some measure with the need for an embargo as far as the province of Quebec is concerned.

The limits referred to are located next to these leased last year by the Ontario Paper Company and are provided with water powers nearby which, when developed, will facilitate the desired development. One of the objects in view in offering such an important area of forests, is to check, if possible, any further exodus of Quebec residents to the United States, by supplying here the industries necessary to keep the people employed.

Wishing to contribute to the industrial and commercial development of one of the existing cities of the province, the Government, in the conditions which must be adhered to by the successful bidder, has provided that the new mill which must be erected within five years, must be constructed within a distance of eight miles of one of the twenty-two cities or large towns of this province.

The mill must have a daily production of at least two hundred tons of pulp and one hundred tons of paper, but it is also specified that before the expiration of seven years which will follow the date of the signing of the contract this daily capacity must reach two hundred tons of paper daily. In other words the promoters of this enterprise must spend between five and ten million dollars to organize the exploitation of their leased timber limits and also be in a position to employ about one thousand men.

According to Government officials this mill should prove a big factor in competition with the American buyers of Canadian farmers' and settlers' wood. They even regard it as a practical solution of the problems raised by the pulpwood embargo.

The leasing of the limits will be conducted under the same system as that which proved so successful in January last, namely, that in addition to the payment of $400 per square mile the price will carry an additional amount over the ordinary stumpage dues in force.

To prevent speculators from interfering with the serious competitors a deposit of $150,000 must be made by those who bid at the auction, and this deposit will be confiscated in the event of the bidder not bidding at least once during the sale.

Canadian Vegetable Parchment Company is making good use of the distribution of samples of their well-known Purity Parchment to spread the message of using Canadian-made goods. The sample just received has a very clever cartoon indicating that the Canadian farmer is beginning to appreciate the value of using Canadian-made goods and developing Canada for Canadians while the European and American manufacturers are looking elsewhere for business. **The Canadian people should consume a much greater portion of Canadian products, both agricultural and manufactured.**

PULP AND PAPER NEWS

George H. Millen, president of the E. B. Eddy Company, Hull, celebrated his 85th birthday last month. Mr Millen is still hale and hearty and is still actively discharging the duties of his big executive position. He began working for the late E. B. Eddy on April 14th, 1866, and has been in the organization ever since. After the death of Mr. Rowley in 1915 he became president. New in his eighty-fifth year he is in splendid health and is out at work at seven o'clock every morning. It is stated that he has his morning paper read by the time other officials get down and is to be found at his office until five o'clock every afternoon.

N. L. Martin, Toronto, secretary of the Canadian Paper Trade Association, has sent out a circular to the members dealing with the adjustment of regulations governing the operation of the Sales Tax Act which is of deep iinterest to the Canadian paper trade generally. It is pointed out that the Department have evidently found that the law, as understood at the time of the annual meeting of the Canadian Paper Trade Association, would prove unpractical in operation, and have modified the regulations in such a manner that the whole affair is very much simplified. Further information will be given when available.

A. P. Costigane, Secretary-Engineer of the Canadian Pulp and Paper Makers' Safety Association, head office Toronto, spent some days recently inspecting the pulp and paper mills in the Niagara Peninsula and reports satisfactory progress along safety lines in most of the mills. In some cases, he stated, great strides have been made in safe-guarding physical hazards and in the functioning of safety organizations.

Norman Harrower, representing Linton Brothers & Co., Fitchburgh, Mass., manufacturers of fine Bristol boards, called on the Toronto paper trade last week.

The Ontario Division of the Canadian Pulp and Paper Association held a meeting in Toronto on Oct. 23 at which a number of matters pertaining to the pulp and paper trade were talked over and routine business transacted.

W. Leslie, who for some time has been connected with the Toronto staff of the Interlake Tissue Mills, Limited, has severed his connection with the company and after a course at the Toronto Technical School will embark in the automobile business in Toronto.

W. J. Trimble, pulp and paper mill contractor, Toronto, has commenced work on the new mill at North Tonawanda, N. Y., of the Ontario Paper Company.

Fred Smith, president of Smith, Davidson & Wright, Limited, wholesale paper dealers, Vancouver, B. C., is spending some time in Toronto on his way home from attending the paper trade meeting in Montreal.

The annual trecking of timber and pulpwood cutters to the woods in the Fort William district has commenced, several of the larger concerns now having men and supplies on their way to the scene of operations. The Fort William Paper Company lately sent a large quota of pulpwood cutters to Yond, their chief camp, 172 miles west on the Grand Trunk line to Sioux Lookout. The average wages is $45 a month and board.

With authority to carry on business of manufacturing and dealing in paper, wallboard and other products from cereal straw, flag straw and other fibrous material, Sealo felt Limited, has been granted a charter with head office at Souris, Man. The authorized capital is $30,000.

D. Pluff, of Wrightville, Ont., had his scalp nearly torn off in the pulp department of J. R. Booth, Limited, Ottawa, recently. He was working at one of the machines when the belt beome loose from the pulley and caused a cut in the scalp 15 inches long.

Major J. I. Hart, Toronto, the newly appointed inspector of Crown Timber Agencies and Supervisor of Operations in the Ontario Government, has entered upon his duties. His time has chiefly been occupied in visiting the different agencies and effecting a closer line of communication between the outposts and the department. His attention will be given largely to reforestation and conservation by taking over large areas that are already planted and well under way toward developing into a new forest that will be ready for a new crop in the very near future. He states that he sees where the province can reproduce the white pin stands that Ontario once had just by careful watching and waiting.

At a recent meeting of the Toronto Carton Club F. W. Fisher, of the Fisher Manufacturing Compny, manufacturers of paper boxes, was presented with a solid gold watch by the members of the organization in recognition of the excellent work he has done in connection with a well promoted campaign for safety in the paper box trade through his connection with the Industrial Accident Prevention Association and the Workmen's Compensation Board. The presentation was made by W. P. Bennet of the Rudd Paper Box Company, Limited, Toronto.

The many friends in the paper box trade in Toronto of "Mac" McKay, of the York Paper Box Company, were pleased to see him back at his desk again last week after a period of indisposition.

At one of the meetings in October of the Toronto Carton Club, Mr. Forth, of the A. D. Shoup Company, Limited, paper box manufacturers, gave an able demonstration of cost finding in the manufacture of a handkerchief box.

J. W. Hewitt, of Paper Sales, Limited, Toronto, is spending a few days on a shooting trip in the Huntsville district.

G. D. Falkenberg, of the board department of Price Bros., Limited, Quebec, was a business visitor in Toronto last week.

George Winlow, sales manager for the Lincoln Mills, Limited, returned to Toronto last week after a successful business trip to the Pacific Coast.

Arthur F. Rutter, Vice-President of Warwick Bros. and Rutter, manufacturing stationers, Toronto, gave a dinner a few days ago at his home 86 Glen Road in honor of the fiftieth anniversary of his connection with the firm. The directors and heads of the various departments were included among the guests, together with a number of Mr. Rutter's intimate friends. Several of the leading business men of the city took occasion at the dinner to express their esteem for their genial host by presenting him with a beautiful bouquet of roses. The roses were sent to Mr. Rutter's home by representatives of W. J. Gage & Co., Brown Brothers and other Toronto printers and wholesale and manufacturing stationers. Mr. Rutter was taken into partnership in the firm of which he is now vice-president in 1886, having worked his way up from a humble position by hard work, intelligent effort and unswerving loyalty to the organization.

The Lincoln Mills, Limited, Merriton, Ont., is the latest paper making organization to join the Canadian Manufacturers' Association. The company was incorporated May 3, 1922, as successors to the Lincoln Paper Mills Co., Limited, who had been manufacturing papers and paper products since 1878 and pulp since 1917. They have three manufacturing units in Merritton, known as the Lincoln mill, the Lybster mill and the sulphite mill. K. S. MacLachlan and George Winlow represented the company at a meeting of the Book & Writing Paper Section last week in Montreal.

Among Toronto visitors to Montreal last week were H. F. E. Kent, of Kinleith Paper Mills, George Carruthers of Interlake Tissue Mills, H. B. Donovan of Canada Paper Co. and Mr. Bradshaw of Bradshaw, Ltd.

At a meeting of the executive of the Canadian Pulp & Paper Association in Montreal last Thursday, it was decided to hold the annual meeting of the Association the week beginning Jan. 1, 1924. During the week there will be meetings of the Technical and Woodlands Sections, and of the various divisions of the Association; the general business meeting will take place Friday morning and the annual dinner that evening.

CANADIAN NEWSPRINT FOR FIRST NINE MONTHS

A report issued by the Canadian Pulp and Paper Association states that the production of newsprint paper by Canadian mills during the first nine months of the current year amounted to 944,820 tons. This quantity is considerably greater than the total previously reached in any complete year with the exception of 1922 when the output was 1,081,364 tons.

In the corresponding nine months of 1922 the Canadian mills produced 799,373 tons so that this year's output up to the end of September exceeds that for last year by 145,447 tons or over 18 per cent. If the mills maintain this level of production during the last three months of the year, the output for 1923 will be well over 1,250,000 tons.

By far the greater part of the newsprint manufactured in Canada is destined for export and up to the end of September our exports of this grade of paper amounted to 839,222 tons or practically 90 per cent. of the total production. The United States is naturally the chief market and 821,788 tons or 97 per cent of the total exports have gone to that country in the first nine months of the year. The remaining 17,434 tons have been distributed mainly to New Zealand, Australia and South Africa.

The following table, shows the quantities exported to the various countries up to the end of September.

	Nine Months	
	1923	1922
Exports to:	Tons	Tons
U.S.A.	821,788	644,733
Australia	5,667	25,488
New Zealand	7,343	8,904
South Africa	3,168	6,019
Latin America	439	3,148
All Other	817	9,632
	839,222	697,924

The value of these exports in 1923 was $63,277,966 and in 1922, $49,689,864.

Newsprint exports this year have exceeded those for last year by 141,298 tons or 20 per cent. while those to the United States were greater by 177,055 tons or 28 per cent. Exports to other countries declined considerably from last year's figures but the decline is especially noticeable in the case of Australio.

RECEIVERSHIP FOR BECKER AND CO.

The Gazette, Montreal prints the following cable. dated London, Oct. 27. A receiver and manager of Becker and Company, Limited, pulp merchants and shippers, was appointed today on the application of the National Provincial and Union Bank of England, trustees of the trust deed securing the debenture holders and holders of secured notes. The matter came up in the Chancery division, and Sir Basil Mayhew, a prominent chartered accountant, was appointed receiver and manager.

It was stated that there had been no default up to the present in the payment of principal or interest, but that debentures and secured notes became enforcible in the event of the company being unable to carry on. The company, which had pulp mills in Great Britain and in Canada, it was stated had reached a crisis owing to the failure of a certain Canadian company to meet its liabilities.

Becker and Company, Limited, is well-known in the paper trade. It has large contracts to fulfill, and there would have been a great disturbance in that trade unless a receiver and manager had been appointed.

Sir Basil Mayhew, the receiver and manager of the company, states that the business will be carried on with a view to reconstruction, and it is hoped that the creditors will eventually receive payment.

Sir Frederick Becker, head of Becker & Co. Ltd., who has been in Canada for some months investigating the possibilities of making paper from Canadian straw, sailed for England on Saturday.

BROMPTON NOT IN IT

The Pulp & Paper Magazine has received a most emphatic denial that the Brompton Pulp and Paper Co. has any interest whatever in the three groups of rapids of the River Megiscane, County of Temiscamingue close to Canadian National Railways which were leased by public auction on Oct. 16. There was only one bidding party, Mr. Louis Napoleon Huard of Levis, who bid five dollars over the upset price of $4,000 annual rent. The successful bidder was to start immediately works of developments on the location of those powers. One of the conditions is that power exported from this province will be charged fifty cents per horse-power. The minimum development of the three groups of rapids aggregate 17,000 horsepower.

It is further reported that the interests with whom Mr. Huard is associated will proceed at once with the power development and will also build a pulp mill, to be expanded later to manufacture newsprint.

The name of E. W. Tobin, M.P. has been mentioned in this connection.

"No sir," said the rabid freethinker, "the idea that there is a God never for a moment has entered my head."—"Same way with my dog—but he doesn't go round howling about it."

UNITED STATES NOTES

Several meetings of members of the new Paper Industries Exchange, New York City, last week, developed differences of opinion regarding benefits of membership in the exchange. It was asserted that mill men derive more benefit from membership than either paper stock men or brokers. In reply to this contention, George W. Gair, president of the exchange, stated that all groups would benefit equally through the elimination of bad practices resulting in sudden and extreme fluctuations in prices. The exchange, he explained, would provide a medium for determination of prices through open trading by public outcry, the collection of dependable information regarding supply and demand and would further stabilize conditions though the operations of an arbitration committee to settle disputes between buyers and sellers. Ultimately, he said, all departments of the paper industry could be represented on the exchange. Already, he said, mills representing the majority of the box board production of the United States are members. Newsprint and book men are expected soon to join. Manager A. J. Neuman has extended the privileges and facilities of the exchange to non-members for a limited period to enable them to familiarize themselves with the operations and purposes of the institution. Arrangements are being made to have transactions on both New York and Chicago exchanges carried by ticker services. Open trading goes on from 12 to 1 o'clock daily and offers posted, which remain open for acceptance until noon of the following day. The New York Exchange was opened October 16 and the Chicago Exchange on August 16. They were inaugurated, as reported in earlier issues of the *Pulp and Paper Magazine*, for the sale of paper stock, paper board and other materials used and sold by the paper industry under rules and regulations similar to those which govern the New York Stock Exchange and the Chicago Board of Trade.

Something new in shredded waxed paper is being offered here by one of the leading makers of this merchandise. It consists of the material in color combination of red, green, purple, yellow and white. It is used for the wrapping of candy and other eatables and for window display purposes. The paper is sold wholesale in 5-pound cartons at $1. each.

Paper and pulp manufacturers, meeting with Congressional representatives, tax commissioners and other state officials at Wausan, Wis., last week, discussed means for perpetuating the forests in the Lake States section.

A very successful business meeting and social gettogether was held on October 23 at the Hotel Lorraine, Philadelphia, by Philadelphia paper box supply salesmen and houses. It was the first meeting of the season and was held in conjunction with the banquet of the Philadelphia Paper Box Manufacturers' Association.

District Ranger R. L. Witherell of the New York State Conservation Commission has organized a ranger club, in and about Salamanca, in Western New York, consisting of boys from sixteen to twenty years old to help in fighting forest fires and they have been of material aid. Other district rangers will be asked to form similar groups.

Henry S. Graves, dean of the Yale School of Forestry and ex-chief of the United States Forestry Service, has been appointed Provost of Yale University. He succeeds Acting Provost Wilber L. Cross, dean of the graduate school.

Work of clearing ground for a new reservior in the Black River Regulating District, New York State, is progressing rapidly under Fred C. Pierce, contractor on the lumbering job. The District Regulating Board will advertise for bids on the erection of the dam next month.

According to a review of the National Bank of Commerce, the United States is the largest producer of chemical pulp in the world, but its production is not sufficient to meet its requirements. The production last year was 2,038,000 tons. Practically the whole of this was consumed in the United States, and was supplemented by about 932,000 tons imported from Canada, the Scandinavian countries and Germany.

Dean Franklin Moon of the New York State College of Forestry, Syracuse, N. Y. announced last week that a gift to the institution of 1,000 acres of Adirondack land had been made by Charles L. Pack, for many years President of the American Forestry Association and now President of the American Tree Association. The property will be known as "The Charles Lathrop Pack Demonstration Forest."

State Forester A. F. Hawes of Connecticut reports that in thirteen years, from 1910 to 1922, there were 11,074 forest fires in Connecticut which burned over 530,000 acres of woodland and did damage of $2,058,227. This is an average of 582 fires a year over 40,778 acres valued at $158,325. It has been possible to classify only three distinct causes of the fires—railroads, bush burning and incendiarism.

MUCH ADO ABOUT NOTHING

Pulp & Paper Magazine of Canada,
Gardenvale, P. Q.
Canada.

Gentlemen:—

In order to set at rest the ridiculous publicity that has been given to the chlorine accident at our Manayunk Plant on the 4th instant we feel it would be a service to the industry if an accurate statement were given of the happening and we would be very much obliged if you will publish it.

One Philadelphia evening paper in scare headlines stated that "Forty-three persons were gassed." What actually happened was that six of our employees and two City Firemen were slightly overcome with chlorine. No one was seriously injured and all had returned to work recovered on Monday morning, the 8th.

The trouble was due to the operator improperly adjusting the yoke or clamp that attaches the discharge valve to the chlorine drum. Only 25 pounds of chlorine in all escaped to the atmosphere.

Most of the excitement and exaggeration was supplied by employees of adjacent plants attracted by the unusual character of the accident, and by reporters thirsting for a thrill.

We feel very much chagrined that so much publicity has been given to a comparatively trifling incident.

Yours very truly
Dill & Collins Company

The Markets

CANADIAN TRADE CONDITIONS

Montreal, 26th October — The market remains quiet and there is little new to report. Contracts for next season, which are generally completed by this time of the year, are late in being closed up. Both buyers and sellers find it difficult to operate and the trading atmosphere is foggy as, while costs of production will certainly be heavier, especially in pulpwood operations, there is a tendency towards lower prices for the finished article. The same anomaly exists in kindred trades and the cause for such a condition apparently lies in the world's political state, which, it can hardly be denied, becomes more and more acute and causes all classes of traders, both consciously and unconsciously, to find it difficult to make up their minds what course to adopt and so to keep putting off the day of definite action. However, one or two mills have about disposed of their output for the next few months and doubtless others will follow before another month has passed.

Ontario Market News

While both manufacturers and distributors of paper and paper products are enjoying a fair amount of business it must be said that there is little snap to trade. A policy of cautious buying prevails in the paper arena generally and while most firms are getting a fair bulk of orders in small lots the era of quantity buying has not yet arrived. That it will come is the conviction of those in the trade generally and there is a general disposition to look for good business as the fall progresses. As far as can be learned few of the mills are booked any time ahead although in the meantime they are running steadily with current orders. An exception to this, however, is the case of a mill in Ontario making book paper which has two months orders ahead for lower grade book and catalog papers and half tone news for which there appears to be a good demand. In book paper manufacture generally there has been a picking up in business as compared with conditions six weeks ago and manufacturers are optimistic concerning the future of this branch of the industry. Bonds and writings are not enjoying heavy sale or production, although manufacturing stationers and envelope manufacturers report a fair volume of business in preparation for the Christmas season. An excellent season for papeteries and paper novelties in the stationery line is already assured. The printing trade has not yet reached a stage where it can make big paper commitments although in some branches they are fairly busy and are using fair quantities of stock. On the whole, however, printing houses are not finding business to their liking. In the wrapping paper and paper bag department there are signs of improving business despite the mild weather which has so far prevailed and which has not been calculated to increase retail trade in the various commodity lines that feed the wrapping paper houses. The wrapping paper mills, however, are enjoying a fair amount of business and their output is keeping up well, while the same may be said of paper bags. Kraft is finding an excellent sale and the mills are said to be busy, while the jobbers report a steadily increasing demand for the product. Board mills report business as hard to get and this condition is reflected in the paper box trade which has not picked up to the extent anticipated at this season of the year. In the paper box line manufacturers and consumers are sticking pretty much to the standard lines and are curtailing on special and novelty lines. The paper box industry, however, is in excellent shape despite a rather protracted dull period and a number of the plants are going ahead and making stock for the Christmas season and on current orders with the utmost confidence that better business is in sight. Manufacturers and distributors of tissues and toilets and light weight papers generally report a steady business but say they could handle more quite nicely. In practically all lines of paper prices are holding steady but there are complaints of price cutting in some lines which appears inevitable during a period when business requires some hard digging to land.

PULP. — Although there has been no actual reduction in the price of bleached sulphite there has been a tendency in some quarters to shave current prices and one firm is said to be selling five dollars under the prevailing price which now runs from $90 to $95, with unbleached from $65 to $70 and news grade $55 to $60. Manufacturers report the demand as fairly good and a number of the mills have very little to dispose of, particularly in the way of the higher grades of chemical pulp. Groundwood pulp is active and although the price remains at from $52 to $55 at the mill there is a tendency towards stiffer prices and it is stated that sales have been made at slightly higher prices than those quoted. Stocks of ground wood for the most part are low, due to low water, and it is reported that many of the United States groundwood mills are short of wood. Due to the drought and the consequent shortage of supplies many of the groundwood plants across the line are endeavoring to replenish their supplies in Canada and producers in Ontario can sell all they can spare at $52 and $55 a ton in place of the $45 rate that prevailed a few weeks ago.

NEWSPRINT. — Newsprint continues extremely active and all the mills are running at capacity in order to meet constantly increasing demands. As a result of the strike which curtailed consumption of paper by the New York dailies a slight over-production had developed and the rumor was circulated that some of the Canadian and American mills might have to close for a day a week until the surplus was taken care of without any disturbance to existing prices. The possibility of the Canadian mills having to take such a step, however, has been completely eliminated as the result of the curtailment of American mills output owing to the water scarcity. Already there are signs that this situation is likely to create a demand for newsprint in the American market which will quickly absorb all the surplus and create a shortage in the near future.

NEW YORK MARKETS

New York, October 27.—(Special Correspondence).—The long drought, which brought mill streams down to a lower level than probably in years, and interfered with the operations of pulp and paper mills in numerous parts of the United States has resulted in further stiffening the tone of the newsprint market. Mills in New York State, Maine and Wisconsin were seriously hampered in manufacturing by water conditions, and at one time it was estimated that the curtailment in newsprint production in these three States amounted to close to a thousand tons a day while the situation was so acute in New York that curtailment reached a total of at least 500 tons daily in this State alone.

However, this condition was appreciably relieved early this week, when drenching rains—approximating betwen two and three inches, and in some sections exceeding three inches—fell over the East and over most of the Middle West, causing mill streams to rise within close to normal levels and permitting paper and pulp manufacturers to resume production on a more normal scale. There was no real scarcity of newsprint during the drought period. Publishers who were in want of extra tonnage over their contract supplies in frequent cases experienced difficulty in finding the paper available for prompt delivery, but contract shipments kept up with little or no delay. The situation was reaching a point, however, where it was unmistakably dangerous, and if the heavy rains had not come there is little doubt that a serious shortage of print paper would have arisen.

A telegraphic report from St. Louis, Mo., today stated that one of the afternoon newspapers in that city yesterday issued a 64-page newspaper. This was not a special edition, and a front page announcement stated that it sets a new world record in size for a regular weekday issue of a newspaper. This contention is disputed by a New York publisher, however, who yesterday printed a regular afternoon edition of 68 pages. These instances will indicate the tremendous volume of newsprint consumption at present. Numerous references have been made recently in these reports regarding the big editions New York publishers have been printing, and the above instance shows that newspapers in other parts of the country than New York are putting out proportionately as large issues and that newsprint consumption is running at record-breaking tonnage in various parts of the States.

The newsprint market tone is exceedingly strong. In fact, it is stronger than at any time thus far this year, the big consumption and the curtailed production in recent weeks leading up to a market condition characterized by greater strength than at any time since the after-the-war boom in the paper industry. Publishers relying on open market purchases are having a good deal of trouble locating all the supply of paper required, and even contract buyers who now and then want extra shipments are not always finding mills in a position to make the deliveries desired.

A rather unique as well as unhealthy condition prevails in the bov board market. Mills in the East are selling news board at identically the same price in the New York market as plain chip board which is unusual,

HANS LAGERLOEF, President and Treasurer
ORVAR HYLIN, Vice President
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TRADE HL MARK

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WOOD PULP

SOLE AGENTS IN U. S. A., CANADA, MEXICO AND CUBA FOR

Finnish Cellulose Association
Helsingfors, Finland

AND

Finnish Wood Pulp Union
Helsingfors, Finland

to say the least. Invariably news board commands a premium of $5 a ton or more above chip board, which is due to the fact that the raw material for the former cost about that much above the raw stock for the latter grade of board. At the present time, old folded newspapers, which are the principal raw material for news board, are selling at $6 to $7 per ton in excess of mixed paper, which is the chief stock entering the manufacture of chip board. Notwithstanding the difference in raw material cost one of the largest board mills in the East, which is said to have arrangements whereby it secures old newspapers at as cheap or cheaper prices than mixed paper, is quoting the same price on both kinds of board and other manufacturers in order to compete are naming similar prices. This puts board producers at a distinct disadvantage, and it is stated that news board is being manufactured and marketed at a loss.

The price generally quoted on news and chip board is $60 per ton f.o.b. New York; there is business being done, however, at lower prices, down to $55 being mentioned. Board plants are fairly busy, those in the West being better supplied with orders than the mills in the East, but they could all readily accomodate additional business, ,and buyers are consequently obtaining some price concessions.

Book paper is quotably steady and demand is fair and gradually expending. There is also a moderately good demand for fine papers, and quotations are maintained. Coarse papers are moving in satisfactory tonnage, tissues especially showing much life. Building papers have slowed down somewhat although the movement is of good volume, while bag papers are in a booming position, demand being active and prices trending upward.

GROUND WOOD—The heavy rains this week have put mechanical pulp manufacturers in a more satisfactory position, and production is doubtless on the rise. However, pulp is being freely absorbed, and so far as can be observed, there is no surplus supply on the market. Rather the tendency is toward a scarcity, since consumption is holding up to a high level. Prices are firm. Most sales of domestic ground wood are between $40 and $42 a ton f.o.b. pulp mills, with some transoction at $44 and $45 reported in instances where a low freight is concerned. Canadian grinders are reported securing from $45 to $50 a ton at pulp plants for ground wood sold to consumers in the States, and a large proportion of domestic consumers are looking to obtain the bulk of their current supplies from across the border. Some ground wood is being imported from Scandinavian sources and this pulp is reported selling at around $45 a ton on the dock at New York and other American Atlantic ports.

CHEMICAL PULP—Importers, dealers and mill agents in New York in common express much dissatisfaction with the prevailing condition of the chemical pulp market. There is not much demand from paper and board mills, such buying as is being done is very spotty in character and mostly of small tonnage. moreover, sellers are anxious to dispose of pulp some of them having stocks which they are desirous of converting into cash, and with buyers few in number, there is consequently an easy tone to prices. The market is so uncertain and irregular that it is questionable just what actual values are. Unbleached sulphite is being offered ~~at 3 cents~~ a pound both for domestic and foreign pulp f.o.b. producing mills and ex dock New York, and in some cases sales are recorded at less than this price. Domestic bleached sulphite of No. 1 quality is quoted at 4 to 4.50 cents a pound at pulp mills, while foreign No. 1 bleached is quoted at 4 to 4.25 cents, and prices on this description of pulp are being shaded in frequent instances. Kraft pulp is in a dull position. Board mills are doing little buying, and No. 1 kraft of Swedish origin is available at 3 cents a pound ond less ex dock New York.

Importers are of the opinion that a spurt of demand for foreign pulp may arise within the next several weeks or in time to permit shipments from Sweden prior to the closing of the Baltic for the winter. If this demand develops it is contended that prices will strengthen since mills in Sweden are reported well sold up and have but limited tonnage to offer American buyers for the remainder of the year.

RAGS—The movement of papermaking rags toward mills is steady but of no unusually important volume Consumers are buying in hand-to-mouth fashion and seem to be having no trouble in getting the supplies wanted, yet the price tone is generally firm and sellers are not pressing stocks onto the market. Roofing rags have sold at 1.50 to 1.60 cents a pound f.o.b. New York for No. 1 packing and at 1.25 to 1.30 cents for No. 2 grade this week. Some sizable lots of foreign dark cottons have sold to felt paper mills at between 1.45 and 1.50 cents per pound ex dock New York for forward shipment from abroad. Old white rags are firm and in good call, and thirds and blues are meeting with fair demand. New cuttings are in spotty demand., there being a good inquiry for some descriptions and little or no interest in others. No. 1 white shirt cuttings are quoted by New York dealers at 12.50 cents a pound f.o.b. this city, fancy shirt cuttings at 6.25 cents, washables at 5.25 cents, blue overall cuttings at 8 cents, unbleached muslins t 11.25 cents, and light silesias at 8 cents.

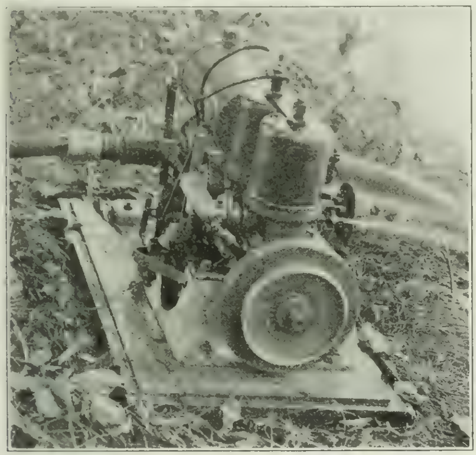
PAPER STOCK—Waste paper prices are on the down trend in the New York market with the possible exception of a single grade. Old folded newspapers are in active demand and indications are that there is not enough supply to satisfy the wants of all buyers, with the result No. 1 news is freely bringing 1.07½ to 1.10 cents a pound f.o.b. New York, while in the Middle West sales at 1.15 and 1.20 cents at shipping points are reported. No. 1 mixed paper is quoted at 80 cents a hundred pounds f.o.b. New York, and is little wanted by board mills. Shavings are quoted at 3.90 to 4 cents a pound f.o.b. this city for No. 1 hard white and around 3.20 cents New York for No. 1 soft white shavings, offerings on the New York Paper Industries Exchange being noted at these prices. Books and magazines are offered at from 1.80 cents a pound upwards f.o.b. New York, with crumpled book stock available at 1.40 cents New York. Old kraft paper is steady in price at around 2.15 cents a pound New York and is meeting with fair demand. There is also a good call for white blank news which is quoted at about 2.15 cents a pound f.o.b. this city.

OLD ROPE AND BAGGING—Prices of old manila rope continue to strengthen. There is a steady demand from bag paper mills, and dealers in New York report sales of No. 1 domestic manila rope at 6.25 cents a pound f.o.b. this city, while foreign rope is bringing close to this figure. In fact, it is likely sales have been made at higher prices as th[illegible]one is exceedingly strong and since dealers claim stocks are unusually light. Old bagging is quiet. Occasionally sales at around 1 15 cents a pound New York for No. 1 scrap burlap, and 85 cents per hundred pounds for roofing bagging ar e reported.

Industrial Items

A PRACTICAL TEST OF FOREST FIRE PUMPS

At Pembroke on September 27th, competitive tests of Forest Fire Pumps were made for the benefit of the Department of Lands and Forests of the Ontario Government, and others interested in the preservation are reported.



A Fairbanks-Morse 1923 model Forest Fire Pump in action

These tests were made at Riverview Park, and were witnessed tests were made at Riverview Park, and were Capt. W. A. Delahey, M.C., District Forester, Sudbury; Mr. Sutherland, Chief Fire Ranger, North Bay; Mr. E. H. Bromley, Chief Fire Ranger, Pembroke; Mr. T. Acheson, Fire Inspector, Sudbury; Mr. Sparks, of the Department of Interior, Dominion Parks Branch, Ottawa; Mr. Smith, President of the Colonial Lumber Company; Mr. W. H. Hawkins, Deputy Chief Ranger, Pembroke; Mr. A. E. Cockburn, Pembroke; Mr. F. A. MacDougall, Forest Assistant, Pembroke; Mr. Perry of the Dunlop Company, Pembroke; North Bay; Mr. Beatty of the Edwards Pulp and Paper Co.; Mr. Arthur Eastcott, of the Pembroke Lumber Co.; Mr. J. H. McDonald, District Forester, Pembroke; Mr. Perry of the Dunlop Company; Mr. F. Patterson of the Thos. Pink Company, Pembroke; Messrs. Goode and Chesley of Montreal and the following members of the Fairbanks-Morse organization; Mr. T. H. McWilliam, Ottawa; Mr. Geo. Wyer, Toronto; Mr. R. Desourdy, Montreal and Mr. Hebert, Montreal.

Both pumps tested were new 1923 stock model units, and were operated by representatives of the Companies interested.

Cassella Colors

Trade Mark

manufactured

by Leopold Cassella & Co., G. m. b. H

, Frankfort o. M.

All Dyestuffs
For
Paper Dyeing

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Best suitable colors for the dyeing of Blotting, Mottled and Envelope Paper.

Inquire for pattern cards and substance samples.

Rubinovich & Haskell, Limited

170 McGill St., MONTREAL

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Forest Fire Pumps under test at Pembroke

To make the capacity tests a barrel holding 43 Imperial gallons, was used, and the hose lines discharged into this barrel.

The pumps were placed on the bank of a small stream and after taking the first test with 200 feet of hose, the 1,000-foot lines were laid up a slope to give about forty feet elevation.

Five tests were made and the results checked by the officials present. The first test was taken by using one line of two hundred feet of hose with a 3/8" nozzle on the line, with three feet suction lift and ten feet elevation, and the time taken by each outfit in filling the barrel was recorded.

The second test was taken with two 1,000-foot lengths of hose off each unit by means of a siamese connection on each unit, each line having a 3/8" nozzle. The capacity test was taken with one stream only, while the other stream was also discharging. The suction lift was three feet and elevation forty feet. Capacity and pressure tests were taken.

The third test was made with four 1,000-foot lengths of hose running off each unit by means of siamese connections. The capacity test was taken by discharging two of the lines into the barrel, while the other two were discharging. 1/4" nozzles were used on all lines. Elevation forty feet.

Because the relative speed of an outfit is of direct bearing on the life of the pumping unit, a test was made to determine the R. P. M. required to operate each pump efficiently.

The number of R. P. M. of each unit was recorded by those present.

The next test was to determine the efficiencies of the units so far as suction lift was concerned. Each of the pumps were set on a bank nine feet four inches above the water, and the discharge was through 100 feet of hose with no nozzle on the end.

The capacity of only one pump was taken at this lift.

These tests made in the presence of those most interested in forest preservation are of definite value, because they proved conclusively that the Forest Fire Pump has been so perfected that a unit will start with ease and will operate steadily and dependably with practically no attention.

PORT ARTHUR SHIPBUILDING CO.

Port Arthur Shipbuilding Co. announce that they have secured the Canadian manufacturing rights of the new Moore & White rotary paper stock screen.

The machine is very simple in construction and this insures a low upkeep cost. To vary the screening capacity or quality it is only necessary to remove the screen plates and replace them with plates of desired cut. The plates used are standard flat screen plates 5-16 in. or 3-8 in. by 12 in. by 43 in. and 20 of these are held in position on the rotating drum by a simple clamping device, no screws being used. The machine has no rubber diaphragm and the vat is perfectly stationary.

This screen is guaranteed against lumps or slime spots as it is designed for maximum self-cleaning efficiency.

It is claimed that this screen, using .017 in. cut plates, will screen 2,000 ft. of news grade stock per hour using only 4 H. P. for driving purposes. It is now being used on High Grade Writing, Ledger, Book, Board, Kraft, News and Specialties by many of the leading paper mills whose names will be furnished on request.

JENKINS BROS., LIMITED, WINS AMATEUR CHAMPIONSHIP

Coming back strong after a twelve years' absence from the baseball field Jenkins Bros., Limited, have stepped right into front place in Montreal Amateur Baseball.

The Jenkins team, playing in the Spalding Intermediate League, smashed their way to victory through the regular season, at the end of which they found themselves tied with the team of the Grand Trunk Car Shops for first position. The play-off on the grounds of the Imperial Tobacco Co., proved the superiority of the Jenkins men, the final score, after a very keenly contested game, being 11-7 in favor of the valve makers who thus secured the Championship. Determined to prove their prowess in still another branch of Sport the Company's employees have now organized a Bowling Team and in the Montreal Manufacturers' Bowling League will strive to achieve a success similar to that won on the Baseball Diamond.

As the school-room is but a preparation for a larger life outside, so eternity is around and beyond and we are here to prepare for it.

Pulp and Paper Magazine
OF CANADA

A Weekly Magazine Devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades

VOL. XXI. Gardenvale, Que., November 8th, 1923 No. 45

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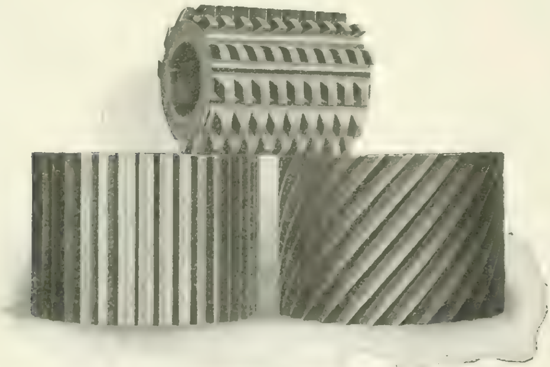

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:-: EDITORIAL :-:

THE INDUSTRY LOSES A LEADER

In the death of Frank Harris Anson, who died suddenly in Montreal on Thursday last, the industry lost a real leader. In building such a plant as the Abitibi Power & Paper Company's mills, Mr. Anson has left a remarkable monument to his ability. But we venture to say that Mr. Anson has left a far greater contribution to our industry in the impress of his powerful personality on the organization that he has built up and inspired, and by the influence of his quiet, kind and unassuming character on the lives of those with whom he came in contact. Mr. Anson was a man of few words, but of great ideas and keen thoughts. He was a man of vision and courage, a man of determined spirit who inspired confidence and enthusiasm, and got things done where a weaker man would have miserably failed.

The story of Abitibi is but the story of the persistent working out of a profound conviction and a strong faith in the future of the pulp and paper industry in Canada. Mr. Anson knew that in the north country there must be a combination of timber and power which would be the ideal combination for a successful pulp and paper plant. This may or may not have been in his mind when two young men in the mining course at McGill University interviewed him, but we are sure that it was largely, if not entirely, due to his natural kindness of heart that prompted him to advance them the money they needed for a summer prospecting expedition north of Lake Temiskaming, when the Cobalt ore strike was fresh and the railroad extended but a few miles beyond Haileybury. It was the report of these students that fixed Mr. Anson's attention on the combination of wood and water power at the spot where the 500 ton Abitibi mill now stands at Iroquois Falls, Ontario.

Mr. Anson was an exceedingly moderate man, but he could not help impressing those with whom he came in contact of the greatness of his heart and of his mind and of the inherent power of his personality. We have repeatedly heard men in his organization say voluntarily and with enthusiasm: "You know Mr. Anson is a great man." He was a great man! But he had that precious gift of being great without making others feel small. In fact, he was just the other way around. He has built up an organization of men. The Abitibi Power & Paper Company is not a one man concern, and though the head and moving spirit has now passed on, we have no fear that aught but success will attend the operations of this Company, though of course Mr. Anson's place will never be exactly filled.

On another page we quote a brief biography of the late Mr. Anson.

THE ASSOCIATION SPEAKS

It is properly expected that in questions affecting the future of Canada's greatest manufacturing industry, the voice of the Canadian Pulp & Paper Association should be heard. There is no more important question confronting the Government and people of Canada at the present time, than the future supply of pulpwood and saw timber. We may even say that with the introduction of pulpboard, fiber containers, plaster board and the like, that the conversion of wood into pulp and its manufacture into other articles of commerce has largely superseded the importance that has so long attached to the lumber industry in respect of building and construction. While this substitution of the reconstructed fiber of the tree for wood in its natural form has proceeded apace for many years, and while pulp boards and synthetic lumber have to a large degree displaced sawn lumber, yet there is no indication or likelihood that lumber will cease to be one of the primary and absolutely necessary essentials to building activities.

The importance of the pulp and paper industry, and the absolute necessity for conserving and improving on our pulpwood resources has never been so acutely felt as at the present time. The importance of the pulp and paper industry is not merely in the fact that it produces an article which, in these days, is one of the primary essentials of modern life, used as it is, in manifold ways, from the building of houses to the writing of letters, the printing of books, newspapers and magazines for information and enjoyment, but it is one of the most important creators of wealth that our people have. We may go even further than this and extend the benefit of the industry into all lines of commerce and business through the many contributory activities which must supply this industry with its raw materials and the manifold services necessary, not only in handling the products of the mill, but also in the distribution of the enormous income of this industry through its employees to every industrial and commercial activity in the Dominion.

Some persons have endeavored to minimize the benefits distributed by the pulp and paper industry to Canada by virtue of its enormous export of finished products by stating that a large part of the profits are paid to people in other countries in the form of dividends. A glance at the dividend records of our Companies will show that even if all of the dividends paid out were sent out of the country it would leave but a small fraction of the amount which is said to be distributed in Canada, and would be entirely insignificant in comparison with the loss that would result to our people were it not for the presence of this industry in our midst.

The Royal Commission appointed to investigate the situation with regard to pulpwood supplies has held hearings in Nova Scotia and New Brunswick and is this week sitting in Ottawa. The Commission has gathered in some information and many opinions as to the situation, but it would appear from the reports of these hearings that the evidence given before the Commission is, for the most part, the result of purely local observation and is, no doubt, largely influenced by the personal profit that is at present coming to the individuals who have appeared before the Commission. The Canadian Pulp & Paper Association has very carefully prepared a brief which covers the whole situation and approaches the subject from every possible angle. It is the privilege of the Pulp & Paper Magazine to be able to present this brief in this and the coming issue of our magazine in order that those who may not receive a copy of the printed brief, may have the opportunity of reading and digesting the wealth of information and the irrefutable argument presented therein for adequate measures for the perpetuation of Canada's forest inheritence. These arguments are as nearly non-biased as one could possibly imagine, and the logical and sound development of the case will present to the Canadian people and others, in a way that has not heretofore been accomplished, a clear understanding of the situation and, we trust, a realization of the responsibility that lies with every citizen and with our Government for taking immediate and effective action with regard to this most important question before our people.

On this great question, the Canadian Pulp and Paper Association is speaking for the people of Canada.

COBWEBS

Consider the apple! The ones that stay on the tree till they are ripe and perfect are hand picked and bring five or ten cents each. The defective ones that drop off are fed to the pigs. The ability to stick and continue to grow marks the difference between the prize-winner and the windfall, in people as well as in apples.

THE SCHOOL OF PAPER MAKING

Next Thursday the Three Rivers School of Paper Making will officially open its doors. Indications at present are for an initial class of from ten to fifteen students who are today undergoing an examination as to their fitness to undertake such a course as is outliner elsewhere in this issue. It is understood that the recommendation as to character from their superintendents will be a factor in the test as the school desires to enroll those who have shown some serious ambition to make good.

The new school, the first of its kind on this continent, has the active co-operation of the industry, in that the Canadian Pulp and Paper Association has appointed an advisory committee to assist the provincial government and school authorities, and the mills at Three Rivers have each been asked to appoint a representative to a local board. For the present, the school will be conducted on the part time plan, but in such a way as to permit students to work a regular shift without disturbing the mill schedule, a problem hat has heretofore been a serious handcap to regular attendance on classroom instruction. The Institute of Industrial and Domestic Arts will provide extra-mural instruction to those who can not conveniently attend the classes.

The person who desires an education so eagerly that he will work eight hours a day to maintain himself and devote nineteen hours a week to his studies (all studying will be done at school) will be laying the foundation for a successful and satisfying career as a pulp or paper makes. The schedule outlined is not too hard for a person with some ambition and will power. We know men who worked as many hours seven days a week while carrying thirty hours of college work which necessitated hard study outside the class room. The man who undertakes such a task and completes it will make good.

The Three Rivers school has a good technical school already organized and the addition of the Paper Making School will extend an educational service that should be welcomed and supported, and for the establishment of which the Quebec Government is to be commended.

British mills increased their sales of paper to Australia by 30,000 tons in 9 months, apparently on account of the special preference. But this is just selling non-British, Scandinavian papers by proxy. There is no duty, and freights are very cheap.

ALUMINIUM

Aluminium was discovered by a German chemist, and originally cost $90 a pound, but at this price its discovery was of little value to the public. It is now manufactured at Niagara and Shawinigan Falls, and the scientific work done by Hall and Heroult has reduced the cost to 22 cents.

Canada's Pulpwood Resources

The Canadian Pulp and Paper Association, whose members are engaged in carrying on an industry which annually produces wealth to the value of 150 millions of dollars, and by exporting the major portion of that wealth brings into Canada an annual cash income of over 100 millions of dollars, is convinced that the present rate of depletion of the Canadian pulpwood forests (the source from which all this wealth is developed) is ruinous to the future of the industry, and therefore to the permanent interests of the country. The Association is also convinced that this present rate of depletion can be materially reduced, without hardship to any Canadian interest or injustice to any interest whatever, and the future of the industry be thereby secured, with very great benefit to the economic position of the Dominion.

The purpose of this statement is to establish three successive points:

First, that the rate of forest depletion is now dangerously high, in the sense of involving imminent and certain peril of a grave handicap to the Canadian pulp and paper industry and a marked increase of advantage to its competitors, not in a hundred years from now, not in fifty years from now, but in ten or fifteen years, or even less.

Second, that the rate of depletion cannot effectively be reduced by any action that can economically be taken by the lessees of the Canadian pulpwood lands, or even by the private owners who possess in fee simple some small portion of the total amount of these lands. From this it follows without further argument that the stoppage of depletion must originate in government action, by the provincial or federal authorities or by both. This does not necessarily mean that the whole "management" of the conservation processes must be entrusted to government officials or to politicians.

Third, that certain forms of action by both classes of government authority, which in the Association's opinion are calculated to achieve the desired result, are perfectly within the powers of the respective governments, involve no hardships to any Canadian interest, and will work no injustice to any interest whatever.

The Rate of Depletion

As to the first point, that the present rate of depletion involves a certain prospect of a steady diminution in the advantages now enjoyed by the Canadian pulp and paper industry in respect of cost of production, a diminution not in the far distant future but likely to commence within a few years and to progress with rapidity, until the industry in Canada, from its present character of a swiftly expanding one, will become a stationary and eventually a contracting one.

Exact statistics are not obtainable either for the total amount of pulpwood (wood of the type and size now employed in the manufacture of pulp) in the Dominion, nor of the rate of its diminution by use and destruction, nor of the extent to which that diminution is offset by natural or artificially stimulated growth. Even if the most perfect statistics were obtainable, they would not give us an accurate statement of the case; for it is not only the "amount" of the consumed timber which is of importance, but its geographical situation. The destruction by fire of a hundred square miles of timber in an area which is not likely to be cut for another hundred years is of less consequence, it may be, than the destruction of ten square miles adjacent to an existing pulp mill. The former may be replaced by the unaided action of nature long before the expanding industry has reached out to utilize it; the loss of the latter may materially increase the operating cost of a great Canadian mill within a year, with an increase which will be permanent and irremediable.

In the absence of statistics we are compelled to have resort to the most expert estimates that are obtainable. Of these there is no lack, and they are in substantial agreement one with another. As the authorities dealing with forests are mainly provincial in character, the estimates are for the most part provincial in area; and as Quebec is the most important of the pulpwood-producing provinces of the East, it is expedient to devote some time to a discussion of the estimates for that province, treating the other provinces more briefly and by means of analogy.

The American interest which argued at Washington in 1920 in favor of the adoption of the Underwood Resolution were naturally concerned to make as light as possible of the depletion of the Canadian forests. They presented an estimate that the Province of Quebec alone contained a stand of 608 million cords of wood, and that 24,320,000 cords could be cut annually therefrom without depletion if it were conducted as a "scientifically lumbered forest." (The estimate of an annual cut of 4 per cent of the stand is of no great interest, as if that rate of replenishment is the sign of a "scientifically lumbered forest" there is no such forest anywhere in Eastern Canada or in the Eastern States). As against this we may place the estimate set forth in the goverment publication, "The Forests of Canada," prepared by the Department of the Interior, at Ottawa, in 1923, under the special care of the Dominion Forestry Branch. In this document the total stand of merchantable timber of every kind of soft wood is given as 871,720,000 cords for the whole of Canada. But of this amount only 65 per cent, or less than two-thirds, consists of good pulpwood, namely, balsam and spruce, the great bulk of the remainder being jack pine, which at present is utilized to a very limited extent. This gives us a total of about 580,000,000 cords of merchantable spruce and balsam in the whole of Canada; but the term "merchantable" refers only to sizes and quality, not to location, and it is therefore necessary to deduct all that immense quantity of pulpwood which lies north of the great divide in Quebec and Ontario, and hence in watersheds running down to Hudson Bay, for such wood, unless it happens to grow within a short distance of the very few railway lines which enter that territory, cannot possibly be brought out to the market. Estimating this inaccessible wood at the moderate figure of 80,000,000 cords, we get 500,000,000 cords as an approximate total for the good merchantable pulpwood of all Canada. Of this the Eastern Provinces are, in the same Forestry Branch 1923 document, estimated to contain 552,210,000 cords of all kinds of soft wood, which gives about two-thirds of that amount of pulpwood, or 368,000,000 cords, and deducting 80,000,000 cords for inaccessibility we get 288,000,000 cords of accessible pulpwood in Ontario, Quebec, New Brunswick and Nova Scotia. It is out of this 288,000,000 cords (and out of only a part of it at that) that almost the whole of the cut of 5,000,000 cords per annum is now being derived; and yet the experience of the best foresters in the Province of Quebec shows that the rate of increment which

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NOTE: This article is the brief submitted by the Canadian Pulp and Paper Association to the Commission on Pulpwood at Ottawa, Nov. 6, 1923.

can be attained by spruce and balsam under the best conditions is only 1.22 per cent per annum.

Before passing from this point to a discussion of the rate of depletion, it may be well to point out that a large part of this stand of 500 million cords is not part of the "operated forests" (whether "scientifically operated" or not) of the present time, but is simply a reserve for the future, the utilization of which cannot take place until the cost of securing wood in more accessible areas has become a good deal higher. The contents of this untouched reserve are stationary, or may by accident be actually diminished; there is no rate of growth upon them whatever, whether 4 per cent or 4/10 of one per cent; there can be no rate of growth upon them until they begin to be cut; they cannot grow one single new log to replace anything that may be cut in the now operated areas, because all that they can do is to replace their own natural decay. They are "matured stands," not growing forests. Whatever rate of reproductive power these areas would possess (and, so far from approaching the one-fifth cord per acre of the American estimate, it is placed by experts at one-twentieth of a cord per acre, much lower than in the operated Canadian lands and the American forests, because of its northern situation and consequently slower growth) is at present being wasted, and must continue to be wasted until it becomes economically feasible to cut timber there. This consideration applies to probably at least 100 million cords of the above estimate, which will continue to be 100 million cords (unless diminished by fire) for a thousand years, if that time should elapse before it begins to be cut, and would not contribute one additional tree even though every tree in the other forests of Canada should be cut down or burnt off in the interval.

Consumption and Destruction

So much for the actual pulpwood reserve of Canada. Now for the rate of combined consumption and destruction. The total annual cut of pulpwood in Canada has not hitherto greatly exceeded four million cords, but the present greatly increased rate of export of unmanufactured pulpwood to the United States, together with the coming into action of several new mills in Canada, indicates that a cut of five million cords will henceforth be a minimum figure so long as the accessible woodlands of this country continue to afford such a crop. A small proportion of this total, not exceeding 300,000 cords, comes from British Columbia, the remainder being the product of the Eastern Canada areas already sketched. This of course is the net cut, as brought to the mill or to the port of export; the gross cordage actually destroyed in getting it out is considerably larger.

But if the Canadian forests lost each year only what is actually taken out of them by loggers, the situation would be comparatively cheerful, even admitting that this five million cords is not spread over the whole 500 million cords of standing pulpwood in Canada, but comes out of (and thus allows a natural replacement process in) only some 200 to 250 million cords in forests under actual operation. Such a rate of consumption, while it certainly would not, even with the most scientific forest management, allow anything to be added to the contents of the forests, would not greatly exceed the rate of replacement which could be attained under such management in all but the coldest portions of Eastern Canada. But we have to add to this consumption an unknown but infinitely alarming rate of destruction by fire and by disease.

Statistics of fire and disease loss in the Canadian forests are even less exact than those of forest contents and rate of extraction. But that it has been in the past and still is immensely in excess of the loss by cutting would be admitted by anybody with the slightest knowledge of Canadian forests. The Forestry Department 1923 document already referred to gives what must certainly be considered a very cautious and moderate estimate. Unfortunately, no distinction is drawn between hard and soft wood. The annual utilization (gross) is placed at 2,616,000,000 cubic feet of standing timber, the fire destruction at 790,000,000 cubic feet and the insect destruction at 1,350,000,000 cubic feet, plus an unknown loss due to fungous diseases, with the total result that "the forests have, during the last five years, been depleted at the rate of upwards of 5,000,000,000 cubic feet per annum." This, it is frankly admitted, much exceeds the existing rate of increment, which it is estimated (by the same authority) "should be," with good management and adequate fire protection, between 7,500,000,000 and 11,500,000,000 cubic feet. As it is, even with utilization and loss estimated as low as 5,000,000,000 cubic feet, "the forest capital of Canada is being materially reduced, owing primarily to the failure to provide for a future crop while cutting and the lack of protection from fire for the natural reproduction."

But other authorities are even less cheerful.

Mr. Frank J. D. Barnjum, a profound student of the situation and a lumberman of 34 years' experience, speaking with the utmost caution and seriousness before the Canadian Society of Forest Engineers in January, 1923, said:

"If you will look over the records of our forest history you will find that the amount of the annual cut is not over one-tenth of the amount of destruction by bugs, fungi, fire and wind. If we had only the annual cut to contend with, and there was no loss from the above-mentioned causes, there would today be just as much timber in Canada as there was when the country was first settled."

The statement that the annual loss from fires and other destructive agencies is ten times greater than the annual cut, it is fair to state, has been challenged by experienced lumbermen when applied to the particular districts with which they are most familiar, their deductions being arrived at by multiplying the annual cut ten times and by showing the impossibility of such a drain taking place; but the statement, nevertheless, receives credence in other quarters and as applying to Canada in general. It must not be assumed that total destruction is the invariable accompaniment of forest fires, since usually much timber is left standing that is subject to salvage. Fire, however, it must be remembered, is vastly more destructive than even the most unscientific logging. The logger is obliged by regulations, and to some extent by his own interest, to leave the young trees of the pulpwood species; fire not only destroys, but it leaves the soil in a condition which, as every experienced lumberman knows, allows such unimportant woods as birch and poplar to spring up first, and it is often many years before the pulpwood species attain to their normal proportional strength.

The rate of fire loss rises with the rise of population—until that advanced stage is reached when the forest area begins to be intersected by extensive agricultural clearings, as is now the case in most of the American States; these in time begin to limit the extent of any single fire in a way that is not possible in such vast uncleared areas as those of Northern Ontario and Northern Quebec.

The rate of disease loss, on the other hand, rises as a direct consequence of both fire loss (when the destruction is not fully complete) and of careless cutting. The tree diseases which are most destructive are due, according to Mr. O. Schierbeck, Forestry Engineer, to the over-multiplication of the natural scavengers of the forests, the beetles and fungi, in areas where an exceptional amount of dead wood has for any reason been left upon the ground. This dead wood may be partially burnt trees, windfalls, or the wreckage of lumbermen's cuttings, the scavengers multiply in it until they have entirely consumed it, and then they turn to attack the living trees. "The loss caused by a fire cannot be counted only as the area burned, the greater danger lies in the fact that it spreads all the forest pests to the unburned sound wood." Nature eventually provides the corrective, because none of these scavengers can flourish on healthy wood as they do on their proper food, the decayed tree, and hence each epidemic of beetles or fungi eventually dies away; but not until it has ruined for generations to come vast areas of healthy trees. One of these pests, the budworm, had a tremendous development in Eastern Canada during the second decade of this century, and it is estimated by Mr. Schierbeck that 150 million cords of balsam, a high-grade pulpwood, is dead or dying as a result of its ravages in the Province of Quebec alone.

In sum, therefore, we find that in Canada the rate of cutting of the pulpwood forests is considerably in excess of what natural reforestation can offset, having regard to the limited area in which natural replenishment can take place, and that in addition to this exhaustive cutting, which alone would suffice to produce a grave shortage of pulpwood within the lifetime of the present generation, there is a further source of depletion, as set forth above, which must in all certainty be many times as great as the actual cut itself, and which is estimated by one expert authority as no less than ten times the cut. It is obvious that this process cannot go on without paralyzing in a few years the operations of many of the plants engaged in the pulp and paper industry, and so raising the cost of operation to nearly all of them as to deprive this country of its present invaluable advantage over its competitors in the United States and Northern Europe. Space does not permit of more than a reference to what may be termed the secondary consequences of deforestation, namely the diminishing of soil moisture, the reduction of water powers and the lessened fertility of the sail. The function of the forest as a preserver of moisture in the soil and a regulariser of stream flow is now too well known to need explanation. The records of the Shawinigan Water and Power Co., Limited, as quoted by Mr. Julian Smith, the president, show progressive increase in the difference between extreme high and extreme low water, due to the denudations by lumber operations and settlement of the watersheds of streams used for power production, and plenty of other evidence to the same effect is available.

The Cost of Conservation

It is sometimes alleged, by those who cannot deny the necessity of forest conservation, that the burden of its cost should fall entirely upon those who are engaged in the exploitation of the forests. Those who advance this contention are unfamiliar with the characteristics of the forest industries, and it is not difficult to show that their proposal is economically impossible and intrinsically unsound. The first objection is that no man can be expected to spend large sums for the preservation of that which he does not own. Of the 155 million cords of available pulpwood estimated above for the Province of Quebec only 25 million cords are on lands owned in fee simple by private individuals and corporations; 100 milions are on lands owned by the Crown and licensed (on a one-year license) to operators, and 30 millions are on Crown lands not licensed to anybody. In Ontario the proportions are closely similar, and in the Maritime Provinces the privately-owned lands are a slightly larger share of the whole. Such preservative operations as are now being carried on are mainly on the private lands, and, for reasons which will shortly be explained they go about as far as is possible in the case of voluntary action by private individuals.

The system of yearly licenses grew up in an age when logging was carried on mainly for lumber purposes, when forests were plentiful and when the "plant" required on or near the limits was small and more or less transportable. It may not be permanently suitable for an industry such as pulp and paper, involving millions of dollars of investment in machinery and water power and in town developments which must be permanently established at a point where logs can be assembled cheaply for generations to come. But at all events it is the system under which pulpwood lands are granted by governments to the operators who are to exploit them. There is naturally a moral obligation resting on the governments to continue the license from year to year, but the terms of the license may be, and from time to time are, changed as the government sees fit. In effect the license-holder at the end of each license year possesses nothing but a first claim on the right to take out a new license for the coming year at the government's own terms. There is an annual rental per square mile and a stumpage charge for timber cut, and both of these may be raised and have actually been raised at the government's discretion. That the license has a certain permanent quality, vague though it must be under these conditions, is however recognized by the fact that when any area is first put under license, the license is sold by the government to the highest bidder, and that provision is made for the transfer of licenses from one owner to another at a prescribed fee. It is also admitted that the licenses are accepted as collateral for loans, and that a cancellation is practically unknown, but these facts do not alter their actual status as year-to-year leases.

With ground rents, stumpage dues and cutting regulations, all of them a matter of complete uncertainty as regards the future, it is obvious that the policy of licensees must necessarily be the getting out of enough timber to pay the capital cost of their licenses within the first few years, while terms and conditions are likely to remain unchanged. They are limited by the Crown regulation as to size of trees and other matters, and to go any further than that in the direction of forest preservation would simply be adding very greatly to the cost of their timber for the sake of growing additional trees, which may not be cuttable for fifty years and which by that time may be of no interest whatever to the present licensee. The return for any investment made in reforestation or other branches of scientific forestry is so excessively remote — a matter of fifty to one hundred years— that even where the forests are the absolute property of the investor it is impossible to secure capital for any such undertaking unless the price of the resultant product is exceedingly high. In very few places can private capital, even where most plentiful, be found embarking upon such protracted adventures except to a very limited extent; the business man will put his money into enterprises where the return, beginning in two or three years from the investment, will be completed in thirty, forty or fifty years, but he will hesitate when asked to invest in a crop which will not ripen until his grandchildren are ready to spend its proceeds and which can yield nothing whatever until it is ripe. Still less will he put it into such a crop to be grown on land that is not his actual property and that is subject to a rental charge which he can neither control nor foretell.

Cost of Fire Protection

And what is true of reforestation and of scientific forest management is equally true of fire protection. The timber that is destroyed by forest fires is not, in the vast majority of cases, the property of a private owner. The licensee has an interest in it, but it is not that of an actual owner. Its destruction means nothing more to him than that, at whatever future date he would have begun cutting it, he will have to go further afield and harvest at higher cost less desirable timber, and possibly even take out a new license on new areas of government land. If he has built an expensive mill which must be kept supplied with wood, his interest will be more acute; but many license-holders have no mills in connection with their limits, and some have no mills at all, and merely cut pulpwood for sale to the best bidders. The price at which these latter (whose interest in the limits is of the most temporary kind) can sell their product is naturally a governing factor in the price that can be paid by any mill-owner for getting timber from his own limits; if the mill-owner pays more for his timber (in capital cost of license, plus ground rent, plus stumpage dues, plus cost of extraction of wood and maintenance and preservation of limits) than his competitors pay for timber on the open market, he is headed straight for bankruptcy, and the fact that in fifty or a hundred years from now he may be the license-holder of a very rich and high-grade forest (belonging to the province) will not help him in the least.

But there are further reasons, apart from the lack of permanent property interest, why it is impossible for limit holders, whether owners or licensees, to make effectual efforts to protect and replenish the forests without action by the government. The most important of these is the fact that the risks are not isolated. The forest of one limit-holder may be impaired by fire or disease originating in his own territory, but it is much more likely to be impaired by invasion from somebody else's limits (or unlicensed government property) outside. A limit-holder might spend ten per cent of the annual value of his crop in protecting his own limits from fire and disease, but unless his neighbors do the same thing his risk will be almost as heavy as it was before. This fact constitutes an obstacle, not only to any effectual effort towards fire protection except where a large body of owners can get together and organize protection for a whole geographical area, but also to any expenditure by individual concerns on reforestation; for whatever sum is expended on reforestation will be exposed during the whole fifty or one hundred years of growth to the imminent peril of loss through fire or disease originating beyond the control of the planter.

Broadly speaking, the poorer the forest, the greater is the probability of its originating a fire. But it is precisely these poorest forests which are least capable of the expenditure necessary for effectual fire protection. A limit which has been cut over, and is therefore of little immediate value to its licensees, though they may be willing to retain the license with a view to cutting it again in ten years or so, is likely to contain a great deal of slash and abandoned rotten wood, the source both of fire risk and of disease. Burnt and diseased areas dry up more readily than healthy ones, and thus offer opportunities for new fires. The perfectly healthy and therefore most valuable forest needs less effort to protect it against fires originating in its own territory, but **cannot** by any human power be protected against fires originating in poor areas and getting well under way. In other words, the task of protecting the good forest must begin in the poor one. This means that it must be performed under government authority. For the owner or licensee of the poor forest will never voluntarily spend money to protect, not his own area which is hardly worth protecting, but the areas of his richer neighbors....The city fire brigade attends ten fires in sheds and shacks for one in a first-class building; but if it did not bother about the sheds and shacks the first-class building would eventually be swept away in a conflagration; and we do not ask the sheds and shacks to bear more than an insignificant fraction of the cost of the brigade. There is no difference between the city buildings and forests, except that a good building is, even without the fire brigade, much less exposed to fire risks **from outside** than a good forest.

Government Action

If it is by now admitted that forest preservation is urgently needed in Canada, not so much in the interests of the present owners of forests and pulpwood mills as in the interests of permanent and growing pulp and paper industry, and therefore in the interests of Canada as an economic unit; and if it is now admitted also that no great advance on the present measure of conservation can be achieved by individual action by private limit-holders, we may pass to a discussion of the possible kinds of action by the two classes of governments, federal and provincial, and of the arguments for and against each of them.

The federal government has no power over property rights within the provinces, and can only intervene when property begins to enter into inter-provincial or international commerce. One particular exercise of its powers in this latter sphere, in the shape of restricting the exportation of unmanufactured pulpwood, has been suggested and will be discussed later. The possible types of action by the provincial governments, both as sovereign powers in the sphere of property rights and as owners and lessors of 95 per cent of the forests, are so much more numerous that they may well be considered first.

And to begin with, let it be premised that concerted action and the utmost possible uniformity of legislation is highly desirable as between the four Eastern Provinces, whose conditions are closely similar and whose forest products are all in close and constant competition one with another, while their forest areas, in the case of Quebec and Ontario, are sufficiently close to one another to allow of the ready passage of fire and tree disease from one province to another. To impose more stringent regulations or heavier dues in one province than in another involves grave hardship to the lumbermen of that province; but if the charges and regulations are uniform in the whole area both benefits and cost will be evenly distributed. In fixing acreage dues, it would of course, be necessary to take into account the varying productivity of the different areas as the yield per acre in one province may be much higher or much lower than that in another.

Second, let it be borne in mind that the forests of all these provinces are producing large amounts of income for the provincial exchequer, of which only an insignificant portion is being spent on their conservation. The Province of Quebec in 1921 was taking $4,500,000 a year out of its forests as provincial exchequer, of which only an insignificant portion of the administrative staff and of a small amount of fire protection. The amount put back has increased somewhat during the last two years but is still inadequate. The State Forest Service of Sweden expends fifty per cent of its revenue on forest improvement and upkeep. Seeing that the revenue of Quebec is being acquired as the result of operations which are steadily and rapidly diminishing the timber supply, it seems to be a very clear case of securing current income by the sale of capital assets. The province is largely living on posterity.

Provided that the regulations are made uniform over the entire Eastern Canada area, and provided also that they are accompanied by a more generous expenditure by the provinces for the preservation of the forest heritage of the future, there is no doubt that considerable improvements could be effected in the method of exploitation as at present practised. The compulsory removal of "slash", the small wood taken from the felled trees in reducing them to transportable logs, is a very commonly suggested improvement, and would certainly reduce immensely the risk of disease and fire. The companies which would like to practise slash disposal are unable to do so now for the competitive reasons outlined above, but would welcome a regulation which made it compulsory. The same is true of the enforcement of a more selective cutting policy.

The question of slash disposal, however, it is to be noted, is a moot one among forest owners and operators. Some contend that such disposal is impracticable and others that it is unnecessary. It is admitted that it would add greatly to the cost of harvesting the wood.

Destruction by Settlers

A large part of the fire losses are due to the introduction of settlers into areas close to the forests and the complete failure of the provincial authorities to enforce upon them the most elementary rules for fire prevention, or to imbue them by educational methods with a proper care in the handling of fire. In one respect the Quebec law actually makes a fire on his own land beneficial to the settler, as he is thereafter permitted to cut and sell an unlimited quantity of timber from the burnt-over area (which may still contain a lot of good wood), whereas without a fire he may only cut five acres a year. The whole policy of admitting settlers into timber lands is open to grave question; the settler maintains himself for a few years by completely stripping his land of timber, five acres at a time or with the help of a fire, and when this is done the land, which has been ruined as forest for a hundred years to come, is as likely as not to prove valueless as plough land, and the settler moves on to repeat the operation elsewhere. If settlement could be confined to areas of proved agricultural value, much would have been done; and after the settlers have been rendered harmless, the fishermen and hunters, another prolific source of fire, might be subjected to much more stringent regulation and much more energetic enforcement. A system of proper land classification is an essential corollary to the adoption of any scientific forestry program for the provinces. At present, "settlers" are frequently placed on land that has no arable possibilities whatever. They strip the land of its wood and then abandon it, leaving it in a condition that renders it utterly valueless. There is so much arable land in every province awaiting settlement that it would appear to be unnecessary to invade land suitable only for tree-bearing for this purpose. A proper classification of all government lands would tend to clear up this situation.

But many of the causes of fire and disease in the Eastern Canadian forests cannot be eliminated even by the best regulations until many years have passed; and one thing in which the provincial governments should take early action is the provision of an efficient force for detecting and checking fires in their earliest stages. At present the governmental expenditure on this head is comparatively nil. In one or two areas several limit-holders have been able to organize together for mutual protection, though for the reasons already outlined their efforts are necessarily restricted. Fire protection, if it is to be effective at all, must be extended to all the forest areas of the country, or at all events to all those which are within striking range of any timber which is now accessible. It should be scientific, involving the promptest possible means of detecting and reporting outbreaks anywhere in such areas, and an adequate force of men and machinery so stationed that they can deal promptly with any fire reported. And it should be disciplinary and educational, endowed with ample authority and incentive for the enforcement of the safety laws, and with funds and machinery for instructing all classes that the happiness of future generations depends on the carefulness of today. The forests are not merely so many dollars' worth of property owned by individuals or the state; they are, if preserved, the sources of the healthy, happy and remunerative employment of thousands of Canadians for indefinite generations to come, and if destroyed they may be the source of poverty and hardship to many thousands of other Canadians, some of whom perhaps have never seen a stand of timber or handled an axe or entered a pulpmill.

The Exportation of Pulpwood

A method of conservation which has been adopted by all the pulpwood-owning provinces, and which has been generally approved by everybody interested in the permanence of the Canadian forest industries, is that of prohibiting the exportation from Canada of pulpwood in an unmanufactured state when derived from crown lands. So far as it has been effective (and its operations have naturally been limited by the fact that timber from lands in private ownership has remained free to leave the country in the log, while in one province even crown timber has been exported after the merely preliminary process of barking), it has tended to diminish one type of consumption of our forests, namely that caused by the American pulpmills which are nearing the end of their domestic supplies and have sought wood across the border. It has already been suggested that this tends to be a more extravagant and destructive kind of consumption than that which is performed by limit-holders who have erected pulp and paper mills in strategic relation to their limits, and have hence a distinct interest in the permanence of the supply. In support of this view it may be mentioned that practically none of the great American pulp concerns which import raw pulpwood from Canada have participated in any of the concerted efforts towards conservation which have been carried on by the owners who have mills in Canada; and also that most of these American concerns possess large timber limits in the United States, which they are conserving by cutting as little as possible while they fill their requirements by importing wood from Canada. Their attitude towards Canada is, naturally and necessarily, that of getting what they can while the getting is good; a tree saved in the United States, where they can always get at it, is easily worth two trees chopped down in Canada, between which and their mills there may at any time arise the barrier of an export or an import duty, an embargo, or a sharp increase in the cost of transportation.

The license clause prohibiting the export of unmanufactured wood does not, as already mentioned, prevent the export of unmanufactured wood from privately-owned lands, and the demand for such wood has in the last few years become extremely urgent. The enormous extent of this trade is shown by the fact that out of less than six million cords of wood used annually by the paper manufacturers of the United States, over a million cords have been drawn from Canada yearly for the past fifteen years, and in spite of the limited sources from which exportable wood can now be procured the amount is increasing rapidly. The rate of export for the half-year just ended has approximated **one and one-half million cords** annually, and is likely to be maintained throughout the year. This is much more than a quarter of the total net cut of the Dominion. In other words, while we are depleting our forests at a rate which threatens to produce a famine within a lifetime, we are doing so largely in order to provide another nation with the wherewithal to save it from further depleting its own.

It is now proposed to put a stop to this exportation by an embargo declared by the federal government in virtue of its powers over trade and commerce. Such an embargo would cause for a time a sharp reduction in the Canadian cut, for the Canadian mills would be unable to absorb immediately so large an amount of additional wood as one and one-half million cords a year.

It is generally conceded, however, that another consequence would be that American concerns, now more or less dependent on Canada for their pulpwood, and who control forest areas here, either under license or in fee, in addition to being forced into making greater use of their American resources, would immediately proceed to build pulp mills in Canada in order to grind their wood here and export it in the form of pulp. In doing this they would only be following the precedent set when the provincial regulations requiring wood cut from crown lands to be put through at least one process of manufacture before being exported were given effect. These regulations date from 1910. They were followed by an immediate expansion of the pulp and paper industry which has continued progressively until it has reached its present important stage. Without the restrictive regulations there would have been no such expansion. While in some cases these records date back to 1908, the real development began in 1910. Since that year the consumption of pulpwood by Canadian mills has shown a constant increase (with the exception of 1921) from a total of 598,000 cords to almost 3,000,000 cords in 1922.

The tremendous increase in the domestic consumption of pulpwood is naturally reflected in the corresponding increase in the production of various grades of pulp and paper, which are shown in the following table:

	Production	
	1910	1922
	Tons	Tons
Mechanical Pulp	370,195	1,241,185
Chemical Pulp	104,409	909,066
Newsprint	215,000	1,081,364
Other papers	*......	285,451

* No records available but the quantity was insignificant.

In the fiscal year 1910, Canada's total exports of pulp and paper were valued at $4,464,197; while in the twelve months ending March 31st, 1923, the total exports were valued at $122,554,889.

Similar restrictions placed upon wood cut from private lands, it is logical to suppose, would stimulate still further the development of the industry and thereby prove of the utmost economical advantage to Canada. To the extent that his industrial expansion resulted in increased consumption of pulpwood, such a measure could perhaps not properly be classed as assisting conservation, but it would take a considerable number of years of even the most rapid expansion conceivable to overtake the inroads at present being made into our supplies by the system of unrestricted exportation now permitted.

Timber can be cut and exported from Canada with practically no capital investment whatever, except the original price of the limit; but the timber now exported from Canada would, if kept in Canada until manufactured and then exported, bring about (and amply remunerate) a capital investment in this country amounting to $150,000,000. It is sufficient to keep 33 pulp and paper mills, each producing 100 tons a day, in operation throughout the year and to give employment to 8,250 operatives earning $11,140,500 in wages. If these mills could all be erected in a single municipality, they and the subsidiary trades and industries which would be needed in connection with them would alone constitute a city larger than any in Canada except Montreal, Toronto, Winnipeg and Vancouver. These figures are not cited with a view to arguing that the mere influx of capital into Canada would be beneficial, for such an argument would be entirely outside of the scope of this statement, having nothing whatever to do with the conservation of pulpwood. The point is this: that every owner of a pulp and paper mill in Canada, representing as it does an immense permanent investment of capital, the productive power of which depends on a continued supply of pulpwood, is a factor working strongly for conservation, whereas every owner of timber lands who exports unmanufactured wood is interested in the present alone, and can be relied upon to strip his land in five years if the price is high and the net return on a policy of conservation threatens to be low or too long deferred. Logging, separated from the subsequent processes, is purely and simply an exhaustive industry, and has proved itself such all over this country for a hundred years; but logging, plus the costly manufacturing industries of pulp and paper, is a permanent and highly conservative industry, with the highest incentive to crop and replenish the soil and enlarge, rather than diminish, the supply of raw materials.

It should here be pointed out that the action of the Canadian Pulp and Paper Association in discussing this particular method of diminishing the danger of exhausting the forests is dictated solely by a regard for the permanent good of Canada and not by any consideration of present profit. The American mills which are now kept in operation by the use of Canadian pulpwood are for the most part old and of an obsolete character, with an extremel yhigh operating cost. They are in any event being gradually abandoned or converted to other uses, as their share of the output is taken over by newer mills; but this process is slow and will last for many years. The stoppage of their supply of Canadian wood would contribute to their finish; and since the American paper market must have a constantly increasing supply of pulp, it is fair to assume that they would be immediately replaced by new mills of the most modern type, erected at the best available sites in Canada. Operating costs at such mills would be lower than at many of the old mills, and the existing Canadian plants would be faced with a much more formidable competition. The only compensation which the present Canadian manufacturers can expect, and the compensation which leads them to favor this method of conservation, is the fact that, once established in close and permanent relation with their Canadian sources of raw material, these new mills would have as keen an incentive for the preservation of the forests as any plant now operating in Canada; and the practice of "mining" or recklessly imperilling areas of woodpulp timber would cease to be profitable to any owner of such areas in Canada, while the amount of capital and labor in Canada directly concerned in conservation would be increased by immense additions. Every cord of wood now exported, and bringing into Canada about $6 for the cutter and another $6 (average) for the railway, would then bring into Canada $50 to $60, which would be divided between the remuneration of labor and that of capital.

There are two alternatives to the embargo proposal which also deserve a brief consideration here. One is the use of an export tax in place of an absolute prohibition. This, if made high enough, would reduce, if it did not completely abolish, the drain on Canadian forests by American pulp mills, and insofar as exportation still continued, the resultant revenue could be expended on conservation. It is open to the objection that an export trade, however, undesirable, which has once become a source of revenue to the government is likely thereafter to be encouraged rather than repressed; while the revenue could under no circumstances be great enough to provide an adequate conservation fund. The second alternative is the use of the embargo proposal in negotiations for a further tariff concession by the United States in the shape of free admission of papers other than newsprint such as book, writing, wrapping, tissues, kraft and blotting papers. These now bear a duty of 25 per cent and upwards, and are nearly all affected by the same condition (shortage of raw materials) as led to the removal of the newsprint duty; so that the placing of them on the free list would not be contrary to any general American interest. It would lead to a sharp increase in the amount of capital invested in paper manufacturing in Canada, with the same result in the shape of an increased interest in conservation; and it would possibly effect the removal to Canada of some mills now using Canadian pulpwood and thus cut down our unmanufactured export. The history of the Canadian newsprint industry since 1910 shows that free access to the United States for the manufactured product is all that is required to bring about a very large transfer of the manufacturing industry to this country, especially when combined with a prohibition of unmanufactured export from crown lands

If it be granted that an embargo on unmanufactured wood would be a step towards conservation, it must still be ascertained whether it be constitutionally and economically possible. It is sometimes argued that parliament does not possess the right to prohibit exportation of anything, at least in time of peace; but since the Dominion government is today prohibiting, five years after the close of the war, the exportation of gold, and allows the exportation of hydro-electric power only under license, the point does not seem to be very well taken. Neither is it of any great importance, since if an embargo were proved to be unconstitutional, a prohibitive export duty would achieve the same object, and nobody questions the right of the Dominion to impose any duties or regulations which it chooses in the case of exports as of imports. A more serious objection is the claim that it would be an unfriendly act towards the United States, which is energetically advanced by the American Paper and Pulp Association through its president, Mr. Henry W. Stokes. This claim is based on two separate arguments, which must be examined separately. The first is that it diminishes the property rights of certain American citizens and corporations who own timber lands in Canada; but since the embargo would diminish equally the property rights of large numbers of Canadian citizens and corporations and of some non-Canadian British and other foreign subjects — in short, of anybody who happens to own that type of property — this argument really relates to the whole question of property rights, and not to the United States in particular, and will therefore be dealt with later on. The second argument is that the American pulp manufacturer as such, and irrespective of whether he is an owner of Canadian timberlands or not, is entitled to buy pulpwood from Canada. The reasons advanced for this claim are (1) that the prohibition of such purchases would be disastrous to the paper industry of the United States. This is extremely farfetched since Canada supplies not to exceed 20 per cent of the pulpwood now used in the United States for paper-making purposes, amounting to about 6,000,000 cords a year. It might also be replied that the last change in the United States tariff was disastrous to equally important industries in Canada, but that nobody thought of questioning the right of the United States to adopt it. (2) That the price of pulpwood in the United States would rise; to which it might be replied that the losses of the American pulpwood buyer would appear to be counterbalanced in that matter by the gains of the seller, and that Canada's action would thus be far from "unfriendly" to those Americans who happen to be "long" on wood. (3) That more than a million cords a year would be added to the drain on the fast-diminishing wood resources of the United States, to which the answer is that our own resources are also diminishing, and that the right of a nation to conserve its own resources is superior to any possible right of another nation to make use of them. Incidentally it may be pointed out that the United States is perfectly capable of supplying its own pulpwood requirements from its own territory, when Alaska is included, and that nothing but the lower price of Canadian wood prevents the exploitation of the Alaskan forests. Secretary of Agriculture Meredith stated in 1920 that Alaska contained pulpwood areas capable of producing two million cords a year for all time. The argument that Canada is obligated to exhaust her own forest reserves by selling wood to the United States while that country completely neglects the cropping of her own reserves seems farfetched.

The effect of the embargo on property rights deserves a brief consideration. The right of the sovereign to prohibit the transit of goods across the national boundaries in either direction is one of the oldest attributes of sovereignty, and has been exercised by sovereign states without question ever since international law began to be a science; and it is inconceivable that a country with so high a conception of national sovereignty as the United States would ever question it. England prohibited the export of unmanufactured wool as early as Edward III, and again from 1660 to 1825, always with a view to stimulating the manufacturing industry. Foreigners, so far from having any special rights, were under Edward IV, prohibited from exporting wool while permission to do so was granted to Englishmen. Generally, the principle is held that foreigners who become possessors of goods within any country become subject to any restrictions of their property rights which may be imposed upon citizens, unless special privileges are guaranteed by treaty. There is thus no question as to the right of the sovereign power to arrest pulpwood or anything else at the national boundary, whether belonging to Canadians or to foreigners. The real question, owing to our system of divided sovereignty, is whether the particular aspect of sovereign power which is involved pertains to the Dominion or to the Provinces. Contentions have already been raised by provincial authorities, which suggest that if the Dominion should seek to exercise the power, the question would have to go before the Law Lords; but the man in the street will have little difficulty in determining that the matter is more likely to be covered by the term "Commerce" than by anything else in the British North America Act.

An embargo, therefore, offers a prospect of a considerable improvement in forest conservation, is constitutional and economically feasible. There is one other possible consequence which ought perhaps to be considered, and that is the adoption by the United States of some form of friendly retaliation, the form usually suggested being the stoppage of coal exports to this country. If the United States were in a position to stop all coal exports, this might be a serious possibility; but while the time may come when she will find it greatly to her interest to do so (and for that reason she is not at all likely to dispute the right of embargo today), she cannot do so now without serious detriment to the mining and transport industries, which would not be offset by any benefit to any interest whatever. And the stoppage of shipments of coal o Canada **alone**, leaving it free to move to any other country, would certainly constitute a breach of international comity, while it would do almost as much harm at home as the complete embargo. Speaking generally, it may be said that Canada is not enjoying any benefits from commercial relations with the United States, except in virtue of some equally important benefit which the United States is herself enjoying as a result; so that none of the benefits which Canada is enjoying can be curtailed except at the cost of a similar and serious curtailment in the United States. The proposed embargo, however, is a step which is so entirely within the rights of any sovereign nation, and so obviously dictated by a sole consideration for the general and permanent interests of the Dominion, that there is scarcely the smallest probability of its being resented by the American people or government; the language of those who will be adversely affected by it, because they have been in the habit of utilizing Canada's forest resources to save them from falling back on their own more distant ones, is intended merely to alarm the Canadian government and deter it for a time at least from taking action.

Much has been made of the fact, in some arguments dealing with proposed embargo, that the United States now admits free of duty some grades of paper and of pulp and for that reason, it is urged, Canada should continue to permit free access to the raw materials of which these products are composed. It is true that the present American tariff imposes no duty on newsprint paper or on pulp. The privilege of shipping in these commodities free of duty is shared by Canada with other countries notably Sweden, Norway and Finland. From none of these countries other than Canada does the United States derive raw pulpwood, so that the right to import raw pulpwood in exchange for the American market for paper does not and never has entered into the consideration. Free entry is accorded solely on account of the fact that the United States is unable to supply its own requirements of pulp and newsprint. On all other grades of paper, such as wrapping, book and writing, boards, etc., which Canada is in a position to produce in large quantities for the export market, the American duty ranges from 20 to 35 per cent. **ad valorem** and acts as a complete barrier to exports from this country. Certainly the claim of the United States to unrestricted exploitation of Canada's raw papermaking material would rest on sounder ground if that country were willing to accord duty-free entry to the finished products made from such raw material.

ADDENDA

Newfoundland, next to Canada, leads all other British overseas dominions in producing pulp and paper. Developments now going on in that country will very shortly add to its prestige and place it among the largest producers of newsprint paper in the world, ranking alongside of the United States, Canada, Sweden, Norway and Finland. The Crown Lands Act, cap. 129. Consolidated Statutes of Newfoundland, has for many years contained a provision inhibiting the exportation of unmanufactured pulpwood. It reads as follows:

> "Sec. 43. No holder of a timber or pulp license shall take or carry away for exportation from the lands licensed any trees, logs or timber, unless and until the same have been manufactured either into paper or paper pulp, sawn lumber or other saleable products of timber, under a penalty of not less than twenty dollars for every tree cut, to be recovered by suit in the name of the Minister of Agriculture and Mines; and trees or timber cut into cordwood or other lengths shall be held not to be saleable products of timber for the purposes of this section."

This Act was subsequently modified, in 1921, by the passage of "The Exportation of Timber Act," permitting the exportation of a certain amount of round timber, cut under special conditions, but limited in its application to timber cut within a period of four years and not applicable to license holders already under contractural relations with the government. This Act requires the payment of a duty of one dollar per cord upon all timber exported under its provisions. Generally speaking, Newfoundland still prohibits the exportation of unmanufactured pulpwood.

An American Opinion on the Policy of Exporting Raw Materials

"No country on earth can get rich shipping raw materials. Raw materials are simply the basis for the employment of labor, and labor creates the wealth which comes out of the use of raw materials. Wherever raw materials can be utilized at home, whether that be the United States or Canada, whether, so far as this country is concerned, it be the utilization in Alabama, for instance, of coal and ore, carrying the raw materials through to the finished product; whether it be in Louisiana in the utilizatión of gas or oils and sulphur, the **Manufacturers' Record** is heartily in sympathy with the policy of using these raw materials at home to as great an extent as possible. It does not believe that we can by legislation prevent the shipment of raw materials from one state to another. That would be unwise under our form of government. Canada has a perfect right to utilize its raw materials at home if it decides to do so. We have a perfect right to utilize our raw materials of all kinds at home for the production of manufactured goods, preferring to ship the finished product into Canada or other countries rather than send the raw materials abroad. It would be better, for instance, for this country if we could turn all of our wheat into flour and ship the flour rather than the wheat, but that point has not yet been reached."—From the "Manufacturers' Record" (Baltimore.)

PRICE BROS. DEVELOPMENT

Public notice is contained in the current issue of the Quebec Official Gazette that Messrs. Price Brothers & Co., Ltd., of the city of Quebec, in the county of Quebec, intend to apply for authorization to have constructed a dam and a hydro-electric power house on the Chicoutimi River, in the town of Chicoutimi, Que.

Notice is also given that a petition to that effect accompanied by plans and specifications of such work, showing the site chosen for the construction thereof and the lands which will be affected by the backing up of the water, has been forwarded to the Minister of Lands and Forests, and that a duplicate of such plans and specifications has been deposited at the registry office of the registration division of Chicoutimi, Que.

The application contained in the petition will be taken into consideration on or after the day following the date of the last publication of this notice in the Quebec Official Gazette.

TO HELP YOU SEE THE EXHIBITION

Guy Tombs Limited have added a Steamship Ticket Department to their General Transportation business, as a result of Mr. Tombs' recent visit abroad. Intending visitors to the British Empire Exhibition are strongly urged to make their steamship and hotel reservations as early as possible, so as to be sure of good accommodation, quite a number of reservations having already been made. London expects business men from all parts of the Globe, as a visit to the Exhibition will be equivalent to a voyage around the World.

The surest evidence of spiritual decline is a shrinking from wholesome moral demand.

Provincial School of Paper Making

Reprinted from the Syllabus of the school which is printed in both, French and English

The Three Rivers School of Papermaking has been organized to train young men for the Pulp and Paper Industry, and to prepare those who are already in it for a more effícient and remunerative career.

The training provided by the School is essentially practical in character and all theoretical teaching has a direct connection with the problems of the industry.

The classrooms, workshops, laboratories and offices of the School of Papermaking are located in the Technical School Building.

Application forms for admission to the School may be obtained on applying at the school office either by mail or in person.

The school office is open every day, except Saturday and Sunday, from 9 to 12 A.M. and from 2 to P.M.

Day Course

Theoretical teaching This covers the following subjects: Applied Mathematics, Physics, Mechanics, Hydraulics, Chemistry, Electricity, Elementary Mechanism, Outline of Industries, Mechanical Drawing, Pulp and Paper Manufacture.

Practical training.—This is carried in the well-equipped shops of the school and includes woodworking and patternmaking, forge and machine shop practice, millwrighting, pipefitting, etc.

Later on, more practical training is obtained by the students in the experimental pulp and paper mill attached to the School.

During the two first years of the course, the students work in the shops of the School and get familiar with machine tools which are found in the industry. For the two last years, the students perform laboratory work and study the details of mill practice.

Requirements for admission.—Applicants are not accepted under 16 years of age; besides, they must have a satisfactory standard as to character and intellectual as well as physical qualifications. Before being admitted to the First year, the applicants must pass a written exmination on portions of Arithmetic, such as:

Addition and subtraction — Multiplication and division
Common fractions—Decimal fractions and decimal numbers
Powers of numbers - - Divisibility by 2, 3, 4, 5, 8, 9
Ratio and proportion — Square root — Percentage
English measures—The metric system—Arithmetical mean

Graduates of a Faculty of Engineering or a Technical School are admitted to the Third year without examination.

Length of studies. — The regular course takes at least four years to go through. No student can pass from one year to the next without obtaining the minimum number of marks set by the Administration of the School.

At the end of each term an examination is held and the pupils are classified in order of merit, and a report giving the marks obtained in each subject is mailed to the parents or guardians.

Curriculum. — The day course is carried according to two systems: the part-time plan and the whole time plan.

The **part-time** plan is meant for the employees of the four Pulp and Paper mills located in Three Rivers. When agreeable to their respective companies, these employees are confined, during the nine months of the school year, to the evening shift (4 to 12). For these students by the part-time plan, the classes begin at 10 A.M. and close at 3 P.M., except on Saturdays, when they close at noon.

The **Whole-time** plan is for those students who do not work in a mill during the school year. On the other hand, they must spend more time every day working in the shops and laboratories and visiting the mills. Besides, these students on the whole-time plan are supposed to be employed in a mill during the 3 months of their school vacation.

Synopsis of Curriculum

Courses	Hours per week	
	Part-time plan	Whole-time plan
1st Year		
Applied Mathematics, Physics	4	4
Outline of Industries	1½	1½
Mechanical Drawing	4	4
Shops and Mill Visits	9	20
Convocation	½	½
Totals	19	30
2nd Year		
Mechanics, Hydraulics, Electricity, Chemistry	4¾	4¾
Elementary Mechanism	2¼	2¼
Mechanical Drawing	4	4
Shops and Mill Visits	7½	20
Convocation	½	½
Totals	19	31½
3rd Year		
Preparation of Pulp	8½	8½
Mechanical Drawing	4	4
Laboratories and Mill Visits	6	20
Convocation	½	½
Totals	19	33
4th Year		
Manufacture of Paper	8½	8½
Mechanical Drawing	4	4
Laboratories and Mill Visits	6	20
Convocation	½	½
Totals	19	33

Holidays. — The classes close about mid June and reopen about mid September. The School is closed:

1o. On Saturday afternoons, Sundays and legal holidays.
2o. From December 24th till following Tuesday.
3o. From Holy Thursday till following Tuesday.

Tuition fees.—Under the part-time plan, the monthly fee is $3.00 for the two first years and $5.00 for the two last years. Under the whole-time plan, this monthly fee is $3.00 for the 1st year, $4.00 for the 2nd, $5.00 for the 3rd, and $6.00 for the 4th. This is strictly payable in advance on the 1st of each month.

Students must purchase their own textbooks, copybooks, drawing materials, etc., which may be obtained at the school store.

The school provides, free of charge, the tools and materials necessary to carry on the work in the shops and laboratories.

Students, when registering, are required to deposit $1.00 as caution money. This sum, minus any deductions for deterioration or loss sustained by the School through the students will be returned at the end of each year. This caution money is not returned to a student who leaves before the end of the school year.

The school will not be held responsible for articles belonging or entrusted to students.

Diplomas. A Government Diploma is awarded to students who successfully pass the final examinations.

Night Course

A course in Paper Technology is given twice a week, from 7.30 to 9 P.M., and is open to all applicants, irrespective of age and aptitudes. This course consists in a series of illustrated lectures and deals with the processes and machinery particular to the Pulp and Paper Industry. The complete course is gone through in a year and may be followed entirely for a fee of $5.00.

Proper Beating: Some Practical Aspects

by R. D. HIGGINBOTHAM, Crocker McElwain Company, Holyoke, Mass.

In the whole process of making paper, high grade paper especially, there is no more important factor than the proper beating of the stuff.

Stuff, rightly handled in the washers and beaters, will, under ordinary conditions, run a successful course through the mill; but, if it is spoiled, either through carelessness or ignorance, in the washing or beating operation, no amount of care and attention on the machines, or in the finishing room, will correct the damage done.

A man's ability to treat stuff, and to get the fibre right for the desired weight and grade is obtained largely by long experience and patient observation. It is the result of a careful training of the sense of touch until that sense becomes a science, a practical art which knows instinctively how to obtain, and also, how to recognize, right conditions when they are accomplished. Associated with the sense of touch is, of course, the practiced sense of hearing which is so indispensable in "sounding" the roll to obtain the proper "brushing out" of the fibres.

It is a well known truth that many men, expert enough in the "feeling" of stuff, experience great difficulties when it comes to "matching" a sample for proper shade. This is due to the fact that the average man has not a "color eye"—he cannot see things "true." Oftentimes his eye has a peculiar tendency toward one particular shade, that is, he erroneously sees a brownish tinge, or a bluish tinge, or some other tinge, in everything he looks at. It takes steady and determined effort, both of will and eye, before he can overcome this weakness.

Some beater engineers would be unable to beat stock if there was no clock in the beater room. They have been taught to beat stuff a certain length of time to obtain certain results, and when they are unable to determine "the time" definitely by clock, they are all at sea. Of course, it is possible to beat by time if all conditions are constant, but if the stock is not right by time, (as sometimes happens when a belt slips, or the roll causes trouble, or the stock is unusually faulty,) it should be made right, regardless of the clock. This can be done only when the beater engineer has developed his beating education to the point where he can tell by skillful tests whether or not the stock is ready to drop into the chest.

I suggest here the intelligent and unprejudiced use of such instruments as the freeness tester, for determining the desired "rate" of the stock; and the blue-glass tester, or the miscroscope, for determining uniformity in the length and coarseness of the fibres. "Practical" men should learn that, although "technical" instruments cannot automatically solve their problems for them, these same instruments, if properly manipulated, can be invaluable supplements to "practical" judgment.

No matter how well the beater engineer handles the preparation of the stuff in the beater room, the ultimate success and satisfaction of his work depends greatly upon how he gets along with his machine tender. Every beater engineer should try to understand the problems and difficulties a machine tender is required to meet, and should do all he can to help the machine man overcome his troubles.

There is probably no place where the beater engineer can lend better assistance to the machine man than in the matter of *maintaining uniform consistency and temperature.* I know, from practical experience, that there is nothing which irritates a machine tender more than the need for everlasting attention and adjustment at the "wet-end" to meet unforeseen variations in the density and temperature of the stock. It is a good thing for a beater engineer to remember that the prime duty of the "wet-end" is to form the sheet, not to solve problems in concentration, etc., which properly should be handled in the beater room.

Some beater engineers, especially those who, for some reason or other, are "mated" with inexperienced or non English speaking helpers, find it difficult to keep their beaters uniform. Instead of using futile profanity and frantically "catching hold" themselves, these engineers should teach their helpers the crucial importance of accurate weighing, the careful following up of the "furnish," the intelligent use of the water, etc. A little patience, a few kindly directions and instructive demonstrations of this sort, will do much toward eliminating the serious mistakes sometimes caused by independable helpers.

Getting ahead as a beater engineer, as in any other profession, depends entirely upon the spirit with which a man does his work, day by day. If he has a genuine pride and interest in his job, if he is anxious to learn; if it is his opinion to do good work today, and better work tomorrow; if he knows how to "do his bit" in building up a fine feeling of teamwork and co-operation in the organization of which he is a part, he is bound to get ahead, for he has established himself upon those qualties which form the foundation of all real success.

Half the world is on the wrong scent for happiness. They think it consists in having and getting and being served by others. It consists in giving and in serving others.—*Henry Drummond.*

MORE THAN A CATALOG

The Chemical Engineering Catalog for 1923 is the eighth annual edition. This is more than a catalog, it is a directory of equipment for the multitude of industries which involve chemical engineering practise, and the application of chemical principles. The fact that the book contains more than 1,070 pages indicates its size but does not represent its value.

Besides assisting the various firms making and marketing equipment used in the chemical engineering industries, and giving a brief summary in each case of the machines or material supplied, the publishers of this catalog have included a book department which lists more than 1,300 books and periodicals, and the publishers carry on an information bureau service, which is probably unique. This department is in charge of an experienced chemist with qualified assistants. This service covers a multitude of features, in fact, it gives practically any kind of information desired except such as might trespass on the field of the consulting chemical or engineering services, or involve controversy as to relative merits of equipment or to give opinion on financial responsibility. For matters of employment, reference is made to the bureau of employment of the Chemists' Club, 52 East 41st Street, New York. A nominal charge of $25 per year is made to any firm or individual using this information bureau service, and the fact that this service has grown enormously since it was put on this basis nearly three years ago indicates its value and popularity.

The plan of the publishers of the catalog in leasing copies at $2 a year to persons in responsible positions in chemical or chemical manufacturing lines, insures that the user has the most up-to-date volume. For those who do not come under the leasing class, the book is available at a charge of $10 per volume. There are a great many in the pulp and paper industry, in fact several in each mill who should have this catalog on their desk. The application for copies should be made to the Chemical Catalog Publishing Company, 19 East 24th Street, New York City.

POSITION OF CHICOUTIMI IN BECKER AFFAIR

In a statement issued with reference to the cabled announcement that a receiver had been appointed for the London firm of Becker and Co. Limited. Senator F. L. Beique, president of the Saguenay Pulp & Paper Co., said that the London firm had been acting for several years as selling agents of the Chicoutimi Pulp Company, the main subsidiary of the Saguenay Pulp & Power Company.

Last year the Chicoutimi Pulp Company, through Becker & Co., Limited, entered into contract with a number of English paper mills, for the supply of Pulp to be taken over a period of ten years on the basis of cost plus a reasonable profit. These contracts cover only a portionally a portion of the output of the Chicoutimi mills, and the company now enjoys a keen demand for its pulp at remunerative prices. As certain divergence of views existed between the directors of the company and Sir Frederick Becker, a termination of the employment of Becker & Co. as selling agents of the Chicoutimi products was contemplated for some time. The situation of the London company has hastened a decision in this regard.

MR. WILLIAM WHYTE
New director of Porritts & Spencer Ltd. Felt manufacturers, Hamilton, Ont.

Senator Beique added that "the president and the board of directors of the Chicoutimi Pulp Company do not consider that the cancellation of the agency affects the contracts entered into by the company with responsible paper mills of England, and they look upon the severance of their relations with Becker & Co. Limited, as having some advantages, among which will be the saving of the larger part of commissions amounting to about $160,000 per year."

C. MARSDEN & SONS IN DIFFICULTIES

Charles Marsden and Sons, the well-known paper firm of which Sir Frederick Becker is chairman, has gone into a receivership. The appointment of a receiver has been made on the application of the National, Provincial and Union Bank of England, which successfully applied last week for a receivership for Becker and Company, Limited, pulp merchants and shippers.

The Marsdens have mills at Barnsley, Tamworth, Wakefield and Newcastle.

WISPS OF WISDOM

You can't expect to meet good company in bad places.

Unless you make up your mind to enjoy your work, you will never like it even a little.

The woman whose work is never done, doesn't have the right kind of a husband.

—The Broke Hustler

The great requisites for happiness are all within reach. Truth, patience, courage, hope and love the things which make character, wherein happiness alone is to be found—are offering themselves daily to every life.

British Trade News

(From Our London Correspondent)

London, Oct. 27, 1932.

The Daily Mail Trust, Ltd., offered for sale this week £8,000,000 7-per cent guaranted mortgage debenture stock at £99 per cent. I mentioned recently that Lord Rothermere and Lord Beaverbrook were associated in the purchase of the Hulton papers published in London and Manchester and the sale of stock has something to do with the purchase. Inside of a couple of hours the necessary money was subscribed by the public. The Daily Mail Trust, Ltd., directorate consists of the Viscount Rothermere (who is chairman), Sir R. Leicester Harmsworth, Bt., Sir S. H. Lever, K. C. B., Frederick A. Szarvast, Sir Frederick Sykes, Sir Mayson M. Beeton, K. B. E. (of the Anglo-Newfoundland Development Co., Ltd) and Hon. Esmond Harmsworth, M. P. The buying up of the Hulton papers will mean that Canadian pulp will be in extra demand for the paper required for the huge amalgamation. Most of the British newsprint sellers do not like Lord Rothermere's latest deal, as they feel that Newfoundland and Canada will supply all the needs of the fast running machinery in the new concern, or syndicate, which will have a controlling interest in at least 13 or 14 newspapers with circulations totalling millions of copies. The new deal has cost the Trust about £6,000,000.

Some Circulations

Amongst the papers controlled by the Trust is the "Daily Mirror," which has a circulation of over 1,000,000 copies per day. Then there is the "Sunday Pictorial" with 2,170,000 copies per week and the Associated papers, including the "Daily Mail" with a circulation of 1 3-4 millions, with millons of copies per day. The security behind the Trust reaches £14,000,000 and all the profits are good. It is, therefore, no wonder that the lists for the issue were closed at 10:15 in the morning, "the issue having been many times over-subcsribed."

It is stated in some quarters in London that the suppliers of newsprint will include English firms. This is a very doubtful point and only time will tell the truth. The "Daily Mail" and "Evening News" and other Trust papers are using Newfoundland paper and with Lord Rothermere at the head of affairs he is not likely to turn his back on trans-Atlantic countries for supplies. He will in all probability follow on the same lines as did Lord Northcliffe.

More Patents

New inventions in the paper industry have been frequent recently. This week, Mr. S. Milne, 38, Larder Road, Edinburgh, appears in the list in connection with the calendering of paper. In calenders for papers, and the like, he states, the rolls are mounted otherwise than vertically and thus relieved of part or all their dead weight. The rolls may be arranged side by side horizontally, or inclined, or part of them inclined and part horizontal.

In the coating fo paper—an invention by H. J. Valentine and F. W. Simpson, 154 Perth Road, Dundee—an irridescent film or coating is produced on paper or other surfaces, by floating on the surface of water a solution of nitro-cellulose or actly-cellulose in an alky ester of a fatty acid, with or without the addition of gums, resins, acetone or alcohol, evaporating the solvent and applying the film to the paper etc., preferably by raising out of the water. An adhesive may be added to the water. In an example, the cellulose solution consists of 50 parts of nitro-cellulose, 1,400 parts of amyl acetate and 5 parts of a solution of caustic.

The Pulp Market

The British pulp market is in a state of dullness and groundwood can be bought at £4. 10s. a ton. Buyers are reserved and the dormant state of business is rather unusual for this time of the year.

The imports of pulps from all sources may be classified as follows in tons:—

	Sept.	9-mths.	9-mths. Value
1922	104,482	623,468	£5,914,126
1923	156,582	849,770	7,502,720

Groundwood: 1,946 tons in September compared with 1,579 tons in 1922 (19,393 valued at £203,632 for nine months compared with 8,600 tons for the corresponding period 1922, at £78,848). The shipments from Canada for the period January-Sept. 30 reached 100,386 tons, an increase of 10,427 tons over 1922. Norway's supplies reach 289,000 odd, but Canada has captured Sweden's market here in a large degree.

Bleached Sulphite: 16,746 tons imported to Sept. 30 of the value of £378,067—an increase of 762 tons over 1922

Unbleached chemical: 287,051 tons valued at £4,186,201 compared with 196,384 tons at £3,363,493 in 1922.

Chemical wet: 10,506 tons at £72,281, as against 19,287 tons at £103,622 in 1922.

The shipments of wet groundwood reached 516,074 tons at £2,662,539, compared with 383,213 tons at £2,005,560 in 1922.

Exports of Paper

The exports of British paper of all kinds, including cardboard, reached 149,595 1-2 tons for the past nine months compared with 79,129 3-4 tons for the corresponding period in 1922. The figures show the success of the export trade and there is a enormous jump in packings and wrapping, the figures to date being 19,205 3-4 tons compared with 9,462 tons for the same period in 1922.

Australia, which gave the British mills the special tariff, imported during the past nine months from British sellers 52,283 1-2 tons of newsprint, an increase of 32,766 tons over the period Jany-Sept. in 1922. Australia is now in the customs list as the biggest buyer of British newsprint and Mr. Bruce, the Premier, is being tackled here over his tariff policy in regard to the Empire. He has already commenced to "hedge" while some of the Liberal writers here are patting him on the back as he "white-haired" boy who can do nothing wrong.

Strange to relate the exports of British printing paper to Canada have increased from 11,370 cwts. to 18,592 cwts. during the first nine months of 1922 and 1923.

(Imports of Paper)

The imports of paper into the United Kingdom for the past nine months reached 439,248 1-2 tons, compared with 394,722 3-4 tons for the same months in 1922. The following shows the position in regard to packings and wrappings and the countries that are competing with Canadians:

	cwts.	cwts	£-1923	Price
Finland	196,127	254,681	290,192	22.8
Sweden	722,473	934,966	1,126,811	23.8
Norway	473,772	492,746	600,645	24.4
Germany	281,758	797,274	902,650	22.6
Belgium	64,214	53,936	134,907	49.8
Canada	85,125	88,173	113,283	25.3
Other Places	196,361	183,215	311,023	34.

These figures go to prove that the consumption of wrappings Kraft, etc., is enormous in the United Kingdom. for not only are supplies coming from within the Empire as well as outside of it, but the home mills capture a fair share of orders. The values given are the c. i. f. values and the price in shillings per hundred-weight from each country.

PULP AND PAPER NEWS

At a special meeting of the Toronto Carton Club held on Oct. 29 the special feature was the demonstration of the cost of manufacturing a one-pound candy box in small quantities, by F. W. Fisher, of the F. W. Fisher Manufacturing Company. S. J. Frame, the secretary, gave an able exposition of the Sales Tax as it affected the industry and a brief address was given by C. T. Reid, of Charles Reid & Co., Hamilton. Other out of town paper box men who were guests at the gathering were; J. Hampel, of the Hampel Paper Box Company, Brantford, John J. Small, of the Guelph Paper Box Company, Guelph; W. Whiteside, of the Stratford Paper Box Company, Stratford; H. M. Niven, of the Peterboro Paper Box Company, Peterboro.

The Canadian Forestry Association, of Ottawa, is establishing local branches in Belleville, Brockville, Kingston and Cobourg. Fred W. Brown, of the C. F. A. staff, was recently in Belleville enlarging the membership of the association which represents a union of 15,000 citizens actively developing reforestation and forest fire prevention. Twenty educational campaigns are in constant operation including the use of railway exhibits and lecture cars, field lectures, motion pictures and other methods.

Pledging the Ontario Government to a policy of development in Northern Ontario, Hon. James Lyons, Minister of Lands, and Forests in the Ontario Government, in a speech before the Canadian Club in Fort William, said that the greatest menace was from fire and that his department was going to work to use more efficient methods of protection. He believed that better protection could be given at less cost. Ontario had lost a million acres of forest in three years, sufficient to make a strip of timberland one mile wide from Halifax to Winnipeg. The city of Fort William was deeply interested in pulp manufacture; in Ontario there were now $140,000,000 invested in pulp and paper plants and by 1925 this would have grown to at least $190,000,000. It was hoped by the Government that it would be able to link up the establishment of new pulp mills with new settlement areas, each industry serving as a nucleus for an agricultural settlement. They had propositions from ten or twelve firms seeking for pulp limits and they would consider the advisability of granting their requests as the Province needs the capital, the labor and the settlers they would bring in, and the authorities intended to get these so that they could maintain their position as the premier province of the Dominion. Alluding to the establishment of pulp and paper industries in the northern section of the province Hon. Mr. Lyons said that he was of the opinion that no pulp or paper company should receive any special privileges from municipalities. The pulp and paper industry is one of the basic industries, he said, and should be able to stand on its own merits, without any aid from the cities. He reminded the audience that the Government was deeply interested in the pulp and paper industry, having control of the vast areas that contain the raw material, and the Government did not want to be mixed up in any family feuds between municipalities. From this he drew the moral that Fort William and Port Arthur should unite under one municipal government for their own good and the he, as minister, would have only one visit to make instead of two.

The Riordon interests recently organized another shipment of 300 men from Champlain County for its camps in Ville Marie, Haileybury and Kipawa.

At the annual meeting of the Commercial Stationers' Association of Toronto held at the King Edward Hotel, Toronto, recently, the following officers were elected: President, W. H. Stainton, of Stainton, Downey & Evis; Vice-President, James P. Cook, of James Cook & Son; Secretary, Frank Selway, of the Office Specialty Company; Chaplain, O. B. Stanton, of O. B. Stanton & Wilson Company; Auditor, Frank Green, of Davis & Henderson, Ltd. A special committee was selected to investigate the situation as affected by the Dominion Sales Tax which comes into force on Jan. 1 next. Different interpretations are being placed on the new regulations and it is desired to have all possibility of misunderstanding cleared away and to avoid such unfair rulings as the possibility of the six per cent tax being applied to firms who supply greeting cards bearing an individual's name and address, engraved or printed, or various printed or engraved social announcements or invitations. These are illustrations of the incongruities that may arise in interpreting the new regulations.

"The Story of the Business of Warwick Bros. and Rutter, Limited" is the title of a beautifully bound and printed book that has just been issued by the well-known Toronto manufacturing stationery firm on the seventy-fifth anniversary of the establishment of the business. The book is a beautiful example of the printer's art, bound in cloth, decorated in gold and profusely illustrated with photographic reproductions of the men who have contributed to the success and development of the business, together with pictures of the various homes that have accommodated the firm since its establishment by the late William Warwick in Woodstock, Ont., in 1848. When the Warwick business was first started in Woodstock that city had a population of 1,000 people and the picture of the store at that period shows a team of oxen standing near a post in front of the store verandah. The book is an excellent historical document and throws some interesting sidelights on the development of commerce both in Woodstock and Toronto. At the request of the Woodstock Public Library Board a copy will be placed in the library of that city.

The sale of the Bank of Hamilton building in Toronto to Montreal financial interests recalls the fact that the site in 1850 was occupied by Buntin Brothers, later Buntin, Reid & Co., wholesale paper dealers. In 1874-5 the Liberal newspaper under John Cameron was at No. 67, while in 1876 the late John Ross Robertson rented the premises, from which he issued the Evening Telegram.

J. Fraser Geddes, of the Culter Mills Paper Company, Limited, Peterculter Aberdeenshire, Scotland, has returned home after a visit to Canada. Mr. Geddes was at one time with the Canada Paper Company, Limited, and for a time, while in Canada was a guest of H. B. Donovan, Toronto manager of the Canada Paper Company.

Although the matter is still under advisement no definite step has yet been taken towards doubling the capacity of the plant of the Fort William Paper Company, according to the secretary of the company, J. G. Gibson, who was interviewed in Toronto last week. The present capacity of the plant is 120 tons a day of groundwood pulp and 160 tons of newsprint. If the contemplated enlargement goes on it will involve an expenditure of between $2,000,000 and $4,000,000 and will increase production to about 400 tons of newsprint daily. The plant, as it stands, represents an investment of about $4,000,000, and directly and indirectly gives employment to about 1,000 men.

Hon. J. W. Lyons and other officials of the Lands and Forests Department have returned to Toronto after a two week's tour of the northern timber districts. The party visited every pulp and paper mill in New Ontario and found that every one is suffering from a labor shortage. The department, moreover, has applications from companies for the erection of ten or eleven new pulp mills or enlargement of existing plants. "If these requests are granted, said Hon. Mr. Lyons, "I do not know what will become of the pulp supply of the province."

The St. Jerome mill of the Rolland Paper Company has been closed down while a new water wheel is being installed.

William R. Lusignea, general manager of the Samuel Jones & Company Division of the McLaurin-Jones Company, Newark, N. J., manufacturers of gummed and coated papers, was a caller on the Toronto paper trade last week.

Operations at the Rudd Paper Box Company's factory in Toronto were suspended while Lloyd George was delivering an address in Massey Hall recently. Don Porter, of the sales staff had rigged up a radio set and by this means the speech of the ex-premier of Britain was conveyed to the employees who had gathered in the recreation room.

A new line of cover paper made by the Howard Smith Paper Company, and known as No. 2 cover in ruffle and antique finish, is being stocked by a number of the Ontario paper jobbing houses.

Angus McLean, President of the Bathurst Company, Bathurst N. B., states that the company's new newsprint machines turned out 55 tons of newsprint a day during the past month. September was the first full month the machine ran when 50 tons a day were produced. It is expected that production will reach 60 tons during the present month which is considered a very good record.

B. C. Nelson, of the Kennedy Carliner & Bag Company, Woodstock, Ont., was a business visitor in Toronto last week.

H. A. Goldsbrough, of the Hodge-Sherriff Paper Company, Ltd., Torônto, spent last week on a business mission to Montreal.

R. A. Brown, of the Canadian Nashua Paper Company, Peterboro, Ont., called on the Toronto paper trade last week.

A visitor to Toronto and other Ontario centres last week was J. J. Herb, a former well-known Ontario paper manufacturing superintendent, and now head of the New Westminster, B. C. Paper Mill Company, manufacturers of light weight papers. Mr. Herb reports an average business in the West with a fairly bright outlook for future trade in the paper line. He met many old friends during his stay in Ontario.

The sale of four timber areas, totalling in extent some 20 miles, has been completed by the Ontario Government. The tracts are in all cases burned over ones which require to be disposed of immediately if the merchantable timber on them is to be realized. They are situated variously in the districts of Timiskaming, Rainy River, Kenora and Nipissing. The successful tenderers were R. S. Potter, of Matheson; W. J. Thompson, of Emo; J. B. Hardy, of Fort William and Joseph Baechler, of Wasing. The contractors paid from $1.50 to $2.20 per cord for the spruce pulp.

News of the death of Frank Harris Anson, President of the Abitibi Power and Paper Company, was received with deep regret by the leaders in the pulp and paper industry in Ontario. Col. J. G. Gibson, Vice-President of the Spanish River Pulp and Paper Mills, Limited, Toronto, wired condolences and, paying tribute to the deceased, declared that the industry had suffered an almost insurmountable loss in Mr. Anson's death as he was one of the outstanding figures in Canadian pulp and paper circles.

NOTED ENGLISH PAPER MAKERS IN CANADA

Members of the Canadian paper trade during the past few weeks have had the pleasure of meeting two distinguished representatives of the industry in Great Britain. One of them is C. R. Seddon, J. P., President of the Paper Makers' Association of Great Britain and Ireland, President of the Employers' Federation of Paper Makers of the United Kingdom, and Managing Director of the Eeast Lancashire Paper Mill Compny, Ltd., Radcliffe, near Manchester. Mr. Seddon is a great power in the British paper industry and during his brief stay in Canada he exchanged ideas with many of the leading paper manufacturers in this country. The other British visitor was Thomas Armstead, director of Thomas Owen & Co., Ltd., Ely Paper Works, Cardiff. Both gentlemen expressed surprise and gratification at the great development of the pulp and paper industry in Canada and devoted some time to the study of Canadian market conditions in their relation to prospective business negotiations between British mills and Canadian consumers. They were entertained while in Toronto, by Mr. H. F. E. Kent, President of the Canadian Pulp & Paper Association, who was glad of an opportunity to further cement the cordial feeling among British and Canadian paper makers.

No one is useless in this world who lightens the burden of it to anyone else.—Dickens.

A doctor observes that a generation that lives on wheels should eat more fruit and fresh vegetables than the generations that walked.

— The Broke Hustler.

ABITIBI HEAD PASSES ON

Mr. Frank H. Anson, president of the Abitibi Power and Paper Company, died early Thursday morning, Nov. 1, at the Montreal General Hospital. Mr. Anson was taken from his residence, [illegible] Peel street, to the hospital Monday evening and operated upon Wednesday morning. He leaves a widow, nee Anna MacAvoy, Buckingham, W. Va., and seven children.

Mr. Anson was born at Niles, Mich., the son of Austin M. and Anna Harris Anson. After an education at Niles, he entered into business life at Minneapolis and then came to Canada, made Montreal his home, and became a naturalized British subject. He quickly showed that he had executive ability, as for many years he was with the Ogilvie Milling Company. He was manager of the foreign department of that company, and in 1904 was named general superintendent. After leaving the Ogilvie Company he became interested with D. Lorne McGibbon in the promotion of the Atlantic Sugar Refineries, Ltd., and had charge of the construction and operation of the refinery at St. John, N.B., for some years. He was also vice-president of the company.

In order to give his whole time to the development of the pulp and paper industry in Northern Ontario, he retired from the sugar business, and built up with the Abitibi Power and Paper Company, Ltd., which may be said to have been his life's most important work. From the time he started on this enterprise until his death, he untiringly devoted to the company all his great energy and ability, and had the satisfaction of seeing his hopes of establishing the largest paper mill in Canada realized before his death. Although he started with only a general knowledge of this basic industry of the country, by application, study and hard work, he became so thoroughly familiar with all its intricate details and ramifications that he was regarded, not only in this country but in the United States, as one of the dominating figures in the industry. The success achieved by the Abitibi company is credited to Mr. Anson's executive ability. He was recognized as a strong and forceful character and a man who could inspire others. Difficulties were faced squarely and overcome. He became president of the company on its reorganization in 1914.

On the social side Mr. Anson was of a reserved and retiring disposition but had many devoted friends. He was an ardent golfer and belonged to the Royal Montreal and the Mount Bruno clubs, the Forest and Stream, the Laurentian, Montreal Jockey Club, St. Lawrence Yacht Club, and the St. James Club.

Mr. Anson as a motorist was an enthusiastic advocate of good roads, his activities in this direction brought him the honor of being chosen president for 1910 of the Automobile Club of Canada, the pioneer body in both automobiling and the promotion of good roads in the Dominion. He was also a president of the Auto and Aero Club. Mr. Anson was in his early sixties.

The funeral took place Saturday morning. Though the funeral had been announced as private, there was a large gathering of friends, and a carriage was piled high with wreaths sent by friends and business associates.

The Very Rev. Dean Carlisle, of Christ Church Cathedral, conducted the service at the home, and interment took place in Mount Royal Cemetery.

The late F. H. ANSON,
Founder and President of the Abitibi Power & Paper Co.

The pall-bearers were: Alexander Smith, of Chicago; Robert Adair, W. A. Black, Grant Hall, George H. Anson and F. H. Anson.

T. P. HOWARD STRICKEN ON LINKS

Mr. Howard who is comptroller of the Howard Smith Paper mills is well as general manager of the Phoenix Bridge and Iron Works, was enjoying a game of golf on Wednesday afternoon with two old friends, Messrs. Fred. Shaw and James Cleghorn, at the Royal Montreal Golf Links, Dixie, when, about a quarter to five, he was suddenly seized with a violent illness, which nearly caused a complete collapse.

After a while, Mr. Howard recovered sufficiently to be driven home. Mr. Howard's own physician, Dr. J. R. Goodall, was immediately called. On arriving he found that Mr. Howard was not suffering from any heart trouble, but had been seized with a violent attack of congestion of the lungs, superinduced by a chill in the cold wind at the golf links.

Mr. Howard is a cousin of Mr. C. Howard Smith.

On Tuesday, Mr. Howard was reported as progressing favorably on the road recovery.

PRESENTED GIFT TO KAY CRABTREE

Mr. Kay Crabtree, who has been general superintendent of the Crabtree Division of the Howard Smith Paper Mills for several years, has taken charge of sales of the surplus bleached groundwood and bleached and unbleached sulphite pulp produced by the company. He installed the up-to-date groundwood plant at Crabtree mills. A banquet was given in his honor at the Joliette Hotel on October 27 by the employees of the Crabtree Division, who attended en masse. Mr. Aubrey Crabtree presided, and Thos. Parks presented a handsome watch, and at the same time expressed the cordial good wishes of the gathering for the continued success of Mr. Crabtree. Mr. Crabtree thanked his friends for their beautiful gift and particularly for their friendship and good wishes.

UNITED STATES NOTES

A decision in favor of the Holyoke paper manufacturers in their wage dispute with the Stationary Firemen's Union has been rendered by Fred M. Knight, umpire in the controversy. The only demands of the firemen that were recognized were those of time and a half for Sunday work and doublt time for holidays, part of which had been conceded by the manufacturers. The firemen according to Umpire Knight's award are to receive 73 cents an hour. Pay for any and all time worked, with the exception of Sunday and holiday work, is to be at straight time rates. The decision takes effect as of October 1, 1923 and continues in force for a period of not less than three months.

Beginning November 1, the Paper Industries Exchange took over its own market service department and statistical bureau. The bureau will be maintained for the exclusive use of its members but much of the collated data will be made available for the public through the daily press and trade magazines.

Officials and leading business men of North Tonawanda, N. Y., last Thursday attended the laying of the cornerstone of the Daily News Paper Corporation's plant in that city. The new plant, situated on the Niagara River, not far from the paper mills of the Chicago *Tribune* at Thorold, Canada, will supply a finer grade of paper than has heretofore been obtainable to the *Daily News* of New York City and to the Coloroto Weekly, a magazine which the Chicago *Tribune* plans to issue from its color presses. The new mill will turn out sixty tons of book paper a day which is intended for use in printing the *Daily News*, making possible even better picture reproduction than it gets now. Construction of the paper mill is well under way, and it is expected that it- will be producing paper by next May. The building is to be of solid concrete 450 feet by 100, situated on fifteen acres of land, which includes a dock and front on the Niagara River and space for storage of timber. Two paper machines can be installed ultimately but in the beginning only one with a sixty ton capacity will be put in. When the plant is in operation the *New York News* and other vessels will bring poplar and birch from the north shore of the Gulf of St. Lawrence. The product of the mill will probably be shipped to New York and Chicago by rail, although, as is the case with the big plant at Thorold, it is possible to ship to either city by water. When the plant is going full blast 150 to 200 men will be employed.

A conference regarding paper specifications for the Government Printing Office will be held in Washington on November 13, the Specifications Committee of the Joint Congressional Committee on Printing has announced. Invitations to attend have been extended to paper manufacturers.

The serious menace of low water conditions in Holyoke which had caused much difficulty to paper and other manufacturing plants in the city during the past summer, was removed following recent heavy rains. But while the long due rain amounted to a five inch fall, the danger is not past unless there is considerable more rain before the ground freezes. The reservoirs, until the rain, had been the lowest for ten years and the Water Commissioners had sent out word that the manufacturers must economize in the use of water. Coming just when it did, the recent downpour called off a 24-hour shut-down ordered by the Holyoke Water Power Company and the water is now running free of restrictions in all of the canals.

Employment figures in the paper and pulp industry for August and September, just issued by the Bureau of Labor Statistics, Department of Labor, show that in 175 paper and pulp mills which reported to the bureau, the total number of employees decreased about 3 per cent from August to September. Pay-roll in these same mills also decreased 1.7 per cent. in the same period. But reports received from 98 paper and pulp mills giving their employment figures for September and August of this year and the corresponding months of last year showed an increase of 2.6 per cent in employment and of 1.12 per cent. in pay-rolls this year over last. Fifty-two paper-box factories making returns for the same two months of both years, gave increases in employment of 6.2 per cent. and in pay-rolls of 9.4 per cent.

A fire at the plant of the Michigan Carton Company, Kalamazoo, Mich., a week ago, destroyed the company's storage house and more than 100 carloads of pulp and waste papers. The loss is put by President Fell at upwards of $100,000. The installation of a new sprinkler system had just been completed in the plant and had been shut off temporarily following a successful test. Work of rebuilding is to begin at once, according to President Fell.

A new publicity organization, to be known as the Holyoke Publicity Club, has just been formed in Holyoke. C. E. Vautrain of the American Writing Paper Company's publicity department has been chosen to head the club.

The recent convention of cost accountants and technical men held in conjunction with the meeting of the Northwestern Division of the Superintendents' Association at Appleton, Wis., proved highly successful. The attendance was lose to 250, and the wish was expressed by many of those present that joint meetings, bringing together all the men interested in the production of paper and pulp, might be held at more frequent intervals. Interspersed with business sessions at which some very interesting papers were read, there was sufficient social diversion to keep everyone entertained. There was a luncheon, a banquet, community singing at the Community Club house of the Kimberly-Clark Company, Kimberly, and visits of inspection to nearby plants. C. . Hambrecht, director of vocational education in Wisconsin, and Prof. Albert H. White of the University of Michigan were the principal speakers at the closing banquet which was enjoyed by 150 men and women. Frank C. Schaminiski of the Whiting-Plover Paper Company, Stevents Point, was elected president of the Cost Accountants to succeed C. A. Jasperson of the Nekoosa-Edwards Paper Company. L. E. Smith of the Nekooso-Edwards Company, was re-elected of the Northwestern Division of the Superintendents' Association. Green Bay was selected by the cost accountants for their next meeting, which is to be held on December 18. The superintendents recommended that the next national convention be held in Dayton, O., but did not select the place for the next Northwest Division convention.

Four new members have been admitted to the News Print Service Bureau. They are the Algonquin Paper Company of Ogdensburg, N. Y.; the Bathurst Company Ltd., of New Brunswick, Canada; St. Lawrence Paper Company, Three Rivers, Canada, and the Fort William Pulp and Paper Company, Fort William, Ont. The Anglo-Newfoundland Development Company has been admitted to participation in the service pending a change in the by-laws of the bureau by which it can be admitted.

The Markets

CANADIAN TRADE CONDITIONS

A picking up in book paper demand and production, an extremely active newsprint market and considerably lessened competition in paper lines from foreign quarters are bright features of an otherwise rather quiet situation in Ontario pulp and paper circles. Practically all the distributers of paper throughout the province bear testimony to an inactive demand for practically all lines of paper, although the fact remains that book paper mills are experiencing a revival and although they are not booked with any great tonnage ahead, publishers and other consumers are providing enough current orders to keep the mills running steadily. Manufacturers of bonds and writings are not disposing of heavy tonnages although there is a fairly steady demand from stationery houses and blank book manufacturers. Orders as a whole, however, are somewhat small in dimensions and with the jobbers curtailing their requisitions on account of a slackness in demand the mills are having some difficulty in marketing their output. The same may be said of most other lines of paper. Mild weather has had a deterrent effect on the retail trade throughout Ontario and this has reflected back upon the wrapping paper and paper bag department of the paper trade. Mills, for the most part, manufacturing these lines, are running light, although it is expected that an active demand will spring up just as soon as the winter weather sets in. Light demand for box board is reflected in rather marked inactivity in the paper box industry although all the paper box factories are running moderately full in preparation for the Christmas trade. The volume of business, however, in this line, is not what it should be at this season of the year. Owing to the backward tendency of the retail trade in the various centres there is only a light demand for the standard lines of boxes and there has been a curtailment in specialities and fancy box lines. A fair volume of business is being done by envelope and manufacturing stationery firms and some jobbing houses handling the higher grades of paper report an encouraging demand. The printing trade is consuming only a fair quantity of paper and business in the printing trade generally is quiet.

PULP.—There has been no material change in the pulp situation and the sulphite pulps continue to show a rather weakening tendency, with groundwood firm and fairly active and helped on by the recent rains. Two factors in the groundwood situation are pointed to as contributory to the rising prices in the product—the putting into commission of a number of new newsprint machines, and the failure to increase the output of groundwood accordingly. Added to this, of course, is the dry season and the lack of the necessary water to grind. The latter situation, however, has been improved now and production from now on should be considerably increased. Bleached sulphite is quoted at $90.00; unbleached at from $58.00 to $70.00; news grade at $58.00, and groundwood at from $50.00 to $55.00.

RAG AND PAPER STOCK.—Dealers report all grades of both rag and paper stocks as in poor demand with the consuming paper mills pursuing a policy of hand to mouth buying . The following quotations prevail: paper stock, No. 1 hard white shavings, $3.75; No. 1 soft white shavings, $3.25; heavy books and magazines, $2.25; ledgers and writings, $2.50; No. 1 kraft, $2.15; newspapers, $1.00; mixed papers, 80c.; miscellaneous No. 1, 60c.; Miscellaneous, No. 2, 40c.; cotton rags, No. 1 white, 3½c.; thirds and blues, repacked, $2.00; roofing rags, $1.00; new cotton cuttings, No. 1 white shirt cuttings, 9c.; fancy shirt cuttings, 6c.; canton flannel, bleaches, 9c.; white lawns, 8c.; blue overall cuttings, 5c; No. 1 scrap bagging, $18.00; No. 1 manila rope, 5¼c.; mixed strings, $18.00.

NEW YORK MARKETS

New York, November 3—(Special Correspondence)—Judging from reports emanating from some quarters, paper manufacturers are rather disappointed with the development of demand for certain kinds of paper. There is no doubting that a good many paper producers and dealers anticipated a broader movement of some descriptions of paper at about this time than is actually the case. Consumers continue to buy in a very cautious manner, few seem willing to absorb other than supplies for which they have direct need, and demand is not voluminous enough to keep all the mills running at anything like capacity production. The result is that in some parts of the market a comparatively easy price tone prevails. Manufacturers in their anxiety to secure as large a percentage of the available business as they can so as to keep their plants well engaged are not hesitating to grant concessions in price, particularly when tonnage orders are concerned. There has been no concerted downward movement of prices; on the contrary, the tendency is, if anything, in an upward direction, though with such keen competition existing it is but natural that buyers in some cases are securing paper at prices slightly below those generally recognized as representing market levels.

This condition is not to be observed in newsprint nor in building papers, bag paper nor some other kinds of paper. It is particularly evident in the box board branch of the industry, and to some degree in book paper, fine and coarse papers. There is little doubt that the current demand for paper of all kinds is running far in excess of normal: it is to be noted, however, that there is what could be accurately described as an overwhelming demand for print paper and an especially good call for several other kinds, whereas the demand for some of the most important descriptions in paper is such that all the mills are not receiving enough business to keep them fully occupied. There is no question that the tremendous expansion of the capacity of paper and board mills in the States during the past several years has a great deal to do with this. If the paper manufacturing capacity of the country was no greater at present than in pre-war times mills would probably be so busy they could not begin to accommodate all the business consumers are placing, but as the circumstances are the productive capacity has been increased to a point where the consuming demand has not yet caught up with it.

It cannot be said that prices of paper are weak. The fact of the matter is they are firm, though it is commonly acknowledged some mills are shading quotations when negotiating on sizeable orders. If a buyer goes to a mill for a small lot of paper there is small chance of him getting anything in the way of a price concession, but let the same buyer approach a manufacturer with an order for carloads of paper whether book, writing, wrapping, tissue paper or box board—and if he is a clever enough buyer he will succeed in inducing the mill to name him a special price. That is the condition in numerous branches of the industry today, and it is due to nothing else than that demand does not measure up to the output of mills and that paper manufacturers are exerting every effort to keep their machines in full operation and to corral sufficient orders to warrant such production.

Newsprint is in a position by itself. The market for print paper is exceedingly firm and active. There is a broad consuming outlet; in fact, it is plainly apparent that manufacturers could readily market additional tonnage if they had the facilities for turning out more paper. Consumption is at a record-breaking pace and inclinations are that it will probably continue to be until at least just prior to the Christmas holidays. With the biggest retailing season of the year just approaching, advertising should keep up on the same large scale of the past month or two, which will mean heavy newsprint consumption.

There is also a big demand for bag papers. Paper bags are taking the place of cotton and jute sacks in numerous instances at present owing to the high prices of cloth bags, and bag paper mills are rushed. Building papers are in steady demand notwithstanding that cold weather has stopped building operations in many parts of the country. Consumption of building paper has been so heavy this year that manufacturers and dealers now are stocking up, which probably accounts for the continued call for supplies.

Book paper is in good demand and a majority of mills are busy. There is, however, keen competition among manufacturers to obtain as large a part of the business available as they can for the reason that there are few book paper mills which could not readily take on additional orders. Fine papers are moving in comparatively good volume, and so are wrappings and tissues, but there is room for improvement in the markets for these papers.

Boxboards have eased off in price. After reverting to the $60 per ton delivered New York level following the ending of the strike of paper box workers in this city last month, prices have again sagged to $55 on both news and chip board, and there is no doubt that some mills are shading this price, particularly where tonnage orders are concerned. It is stated that board mills in the East are operating at between 80 and 85 per cent of full capacity, and it is the effort to fill up the remaining capacity which is creative of so much competition among board producers. Consumers are buying board in a hand-to-mouth manner as they usually do on a declining market, and the fact that demand is so restricted and is still ample to keep mills on an 85 per cent basis speaks well for the industry.

GROUND WOOD—Quotations on mechanical pulp are holding steady and the market as a whole displays little change. Evidently there is a ready demand to absorb practically all the pulp offered by producers, who for the most part are still handicapped to some extent by water conditions and who are not turning out their full tonnage. Consumption of ground wood by newsprint mills is heavy and board and other paper plants are using mechanical pulp in good amounts. Domestic ground wood is selling at around $42 per ton f.o.b. producing mills, and Canadian grinders continue to receive from $45 up to $50 a ton at producing mills for ground wood sold to consumers in the States. Most traders are of the opinion that mechanical pulp prices will remain firm because it is felt the winter freeze will come along in the near future and place further limitations on the output, thus continuing the shortage which has existed recently.

CHEMICAL PULP—No expansion of demand is reported for chemical pulp. Buying by paper and board manufacturers is of very limited scope, and prices are so irregular and uncertain that it is problematical what actual market levels are. Producers and importers are quoting certain rates and then turn around and accept orders at recessions, which reflects the easy tone of values and the anxiety of sellers for business.

Kraft pulp has eased off a bit further. No. 1 foreign kraft is reported to have been sold down to 2.75 cents a pound ex dock New York or other American Atlantic ports, yet it is stated that sales at this basis are below replacement costs in Scandinavia. Bleached sulphite is moving but in a limited way and at sagging prices. Foreign No. 1 bleached is seldom fetching above 4 cents per pound on the dock, and No. 1 domestic is bringing only between 4 and 4.25 cents although some mills quote 4.50 cents for their best grade. Bleached soda pulp for book paper mills is quoted at 3.75 cents per pound at pulp mills, and unbleached sulphite of No. 1 quality at around 3 cents at producing plants.

RAGS—The movement of papermaking rags is nothing out of the ordinary. There is a consistent call for some grades, and others are wanted in sufficient amounts to sustain values, and yet the tendency of prices in most cases is downward, which is somewhat abnormal for this time of the year. Roofing stock is showing increased steadiness. No. 1 domestic roofing is selling at 1.50 to 1.60 cents a pound f.o.b. New York, and No. 2 packing at 1.25 to 1.30 cents, while foreign dark cottons are bringing 1.50 cents ex dock New York. Old whites are stationary in price though demand has slackened, and thirds and blues are quoted at unchanged rates, repacked blues at 3 to 3.25 cents at dealers' shipping points and miscellaneous packing at 2.50 cents. New cuttings are far from firm but some grades which are relatively scarce are easily holding their own in price.

PAPER STOCK—Rather sharp declines have occurred in prices of old paper. The development of an increasingly weak undertone came somewhat as a surprise to the trade, which had not expected board mills to suddenly let down in their buying to such a pronounced extent as they have. All grades have been affected. Shavings have moved off in price to where offerings by dealers of No. 1 hard white at 4 cents a pound New York, and even down to 3.80 cents, and of No. 1 soft white shavings at 3.15 cents New York have met with scant response from consumers. Magazine stock has literally tumbled in price. No. 1 heavy books are quoted at 1.60 cents a pound f.o.b. New York, and probably lower in some instances, and crumpled book stock at 1.30 cents New York. Folded newspapers are down to 95 cents a hundred pounds f.o.b. New York, and No. 1 mixed paper to 60 cents. Old kraft paper is relatively steady at 2 cents or a trifle higher at dealers' shipping points, and ledger stock continues to fetch 2 to 2.10 cents per pound New York. Dealers and packers contend that available supplies are light notwithstanding the slow movement into consuming channels, and say that any increase in mill demand would cause an immediate strengthening of prices. There is at the moment however, no signs of any quickening of buying interest among consumers.

OLD ROPE AND BAGGING—Old manila rope is strong in price and under brisk inquiry. Bag paper mills are buying freely, and the trend of the market is sharply upward. Sales of No. 1 domestic manila rope at 6.25 cents a pound f.o.b. New York have been made, and dealers in frequent cases are now demanding 6.50 cents. Foreign manila rope is bringing 6 to 6.25 cents ex dock New York, and importers state they cannot buy in Europe at less than a landed cost of 6 cents. Old bagging is quiet with quotations rather stationary. No 1 scrap burlap is quoted at about 1.25 cents a pound f.o.b. New York, and roofing bagging at 95 cents to $1 a hundred pounds New York.

PROCEEDINGS OF BRITISH TECHNICAL SECTION

The Technical Section of the Papermakers' Association of Great Britain and Ireland have just issued Part 1 of volume 1V, which is a book of 124 pages, with the papers and discussions that formed the Proceedings of their annual and sectional meetings. This book will be sent pospaid on receipt of $2.60 by the Secretary at 26 Farringdon St., London E. C. 4. This copy of their Proceedings contains information of great value to the papermaker and the pulpmaker as will be seen from the following table of contents:

Foreword by A. W. Foster, B.A.
Minutes of Annual General Meeting
Testing the strength of Pulps by R. W. SINDALL, F.C.S.
Automatically Controlled Hydraulic Power Transmission as applied to a Paper Mill by J. W. Rose.
Influence of Temperature on the Drying of Wood Pulp by G. Keville Davis, M. Sc.
Felts: Their Efficiency and Life by F. W. Vickery, O. B. E.
Notes on the Resistance of Paper to Tearing by T. Trevor Potts.
Rosin from the Tree to the Barrel by B. L. Morgan.
Rosin Sizing by A. E. Leicester.
Steam Utilisation in a Modern Newsprint Mill (Reprinted by courtesy Canadian Technical Section.) by S. W. Slater and J. E. A. Warner.

Canadians will appreciate the courtesy done us in the printing of the excellent paper presented at the last meeting of the Technical section by Messrs. Slater and Warner.

HANS LAGERLOEF, President and Treasurer
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NEW LINE OF CANADIAN-BUILT DRY VACUUM PUMPS POSSESSES MANY UNIQUE FEATURES

A new line of steam and belt-driven dry vacuum pumps has recently been placed on the market by the Canadian Ingersoll-Rand Co., Limited, 260 St. James St., Montreal, Que.

The belt-driven units are known as the Class "ER-I," and the steam-driven machines as the Class "FR" air and gas compressors and, like the latter, are of the single stage, straight-line, centre crank, dust and dirt-proof type with automatic lubrication of both running parts and vacuum ends.

They embody every refinement of modern vacuum pump design, including a number of features which make them as nearly automatic in action as any machine of this type can be expected to be. This is an important consideration in any vacuum pump, but is even more essential in the case of small and medium sized units which are often operated in isolated locations where but little attention can be given them. Large machines, on the hand, are generally located in a central power house under the supervision of an expert engineer. These machines are recommended for use in canning factories, smelting plants, packing houses, paper mills, etc.

The Class FR-I vacuum pump consists of a plate-valved vacuum cylinder direct-connected to a steam engine with balanced piston valve, a design which makes it possible to operate with high pressures and superheated steam as well as the moderate pressures more common in the past. This feature alone ensures a steam economy at all pressures, not heretofore attainable.

The main frame of both types, as previously mentioned, is of the enclosed design, the bottom part forming a reservoir for the combined splash and flood lubricating system. It is fitted with removable side and crank end covers which are not bolted on but are retained by lips on the frame casting. Removal of these covers permits inspection or adjustment of all running parts. The crosshead guides are of the bored type and the design of the frame provides for an oil stuffing box near the cylinder end of the frame, which prevents any chance of crank case oil entering the vacuum cylinder. Openings in the cylinder end of the main frame and in the trunk piece interposed between the steam and air cylinders on the class FR-I type provide for adjustment of stuffing boxes when running.

The main frame and trunk piece of the steam-driven units are mounted on a substantial cast iron-base which lends rigidity to the entire structure, makes the machine a complete, self-contained, accurately aligned unit, and also forms a support for the single rocker arm which guides the valve rod. There are no guide blocks or other sliding surfaces in the piston-valve gear.

The main bearings are of very heavy construction and provided with removable die-cast shells or liners of genuine babbitt metal which can be removed and renewed in a few seconds, at small cost. Due to the area of the bearings and the complete circulation of oil through them at all times, however, the shells last for very long periods without appreciable wear.

The crank-shaft and connecting rods are solid one-piece drop forgings, accurately machined and heat-treated. The connecting rod is of the solid end type with renewable and adjustable boxes in both crosshead and crank-pin ends. The crosshead is of the cylindrical type, of box construction with adjustable shoes bored and turned.

Pistons are of the box type with broad faces and are securely fastened to a turned and ground steel rod.

Oil is distributed to all of the running parts by throwers on the crank webs which lift or throw the oil against baffles from which it runs to all wearing surfaces. This system, now widely used, was originated by this Company more than twenty years ago and is probably the simplest, most effective, cleanly and economical ever devised.

Lubrication of steam and vacuum cylinders is provided for by a double compartment, adjustable sight feed, mechanically operated lubricator.

The piston steam valve is provided with two piston rings at each end and operates in a renewable bushing. With this type of valve there is no rapid wearing or cutting and the valve chest stuffing box is only subjected to exhaust pressure, as steam is admitted to the centre of the valve and exhausted from the ends

Regulation of the class FR-I vacuum pump is regularly provided for by an adjustable speed throttling governor, although a "Wide-Range," automatic cut-off, fly wheel governor, is sometimes used.

The class "ER-I" belt-driven units are furnished for either long or short belt drive. The latter arrangement is generally preferred as it not only saves floor space but also increases the arc of belt contact and reduces belt wear and bearing load.

Both classes of these machines are built in four sizes with piston displacements of about 500 to 2,300 cubic feet per minute. They are well adapted for filter pans, evaporator effects and similar classes of service where high and steady vacuum is required.

With closed intakes they will pull up to 1.0 inch absolute, or 29 inches when referred to a 30 inch barometer—this vacuum differing, of course, with the size and stroke of the pump.

High speeds of operation coupled with the high volumetric efficiency provide greater capacity for a given size of cylinder, resulting in a marked economy of floor space.

The Canadian Ingersoll-Rand Company, Limited, also announce their bulletin K-315, describing these machines which are produced at their Sherbrooke plant. This catalog contains 20 pages and numerous illustrations covering these machines, and should be of value to any one interested in either belt or steam-driven vacuum pumps for use in canning factories, chemical plants, smelters, salt mines, condensed milk factories, pulp and paper mills, etc

THE PAPER AND PULP MAKERS OF THE SCANDINAVIAN COUNTRIES

The house of Hugo Brusewitz, Gothenberg, Sweden, has produced a very complete Directory of the pulp and paper makers of Sweden, Norway, Denmark and Finland with the co-operation of the Secretary of the Swedish Woodpulp and Cellulose Association. The fact that this is the seventh English edition indicates the importance of the trade with English-speaking countries in the business of pulp and paper making in the countries of northern Europe.

The Directory contains lists of mills in Sweden, Norway, Denmark and Finland, each arranged according to countries and followed by an index of the mills, which are described somewhat after the fashion of the list of mills in the International Number of the Pulp and Paper Magazine. There is also a list of paper mills in each of the countries, arranged according to products. Following this information is a general index together with an index of trade marks and an index to advertisers in the Directory. One of the very interesting features of the book is a folded map which is enclosed in a pocket in the back cover, and which shows the location of all of the mills referred to in the Directory.

Pulp and Paper Magazine
OF CANADA

A Weekly Magazine Devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades

VOL. XXI. Gardenvale, Que., November 15th, 1923 **No. 46**

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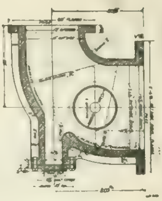

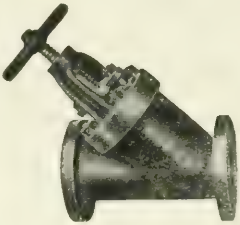

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:-: EDITORIAL :-:

ALL DRESSED UP AND NO PLACE TO GO

To paraphrase a bit of Scripture: the foxes have holes and the birds have nests, but the Pulpwood Commission has nowhere to sit them down.

When the Ottawa hearing of the Pulpwood Commission was announced, it was naturally expected by those attending that the sessions would be held in the Government Buildings. But no! the prodigals got no such welcome on their return from the far country. Were they taken in and given the guest chamber? They didn't even get a back room. There was no room. Where did they go? Well, after casting about, the meeting finally came to roost in a sort of attic room in the Carnegie Library. Think of it! A Royal Commission turned away from its birthplace and finding shelter in a building that is largely the gift of an American plutocrat. The crowning irony of the situation was a sign on the wall behind the chairman, and which he did not see at first, reading NO SMOKING. And the chairman is one of the biggest tobacco men in Canada!

THE BECKER BREAK

It is not yet known just how serious is the breakdown of the Becker amalgamations, nor how seriously the Canadian mills involved therein will be affected.

There were five Canadian companies in the Becker group; the Sissiboo Pulp & Power Co., Weymouth, N.S., the Clyde Pulp Co., Clyde River, N.S., the St. Lawrence Pulp & Lumber Co., Chandler, Que., the Ha! Ha! Bay Sulphite Co., Port Alfred, Que., and the Chicoutimi Pulp Co., Chicoutimi, Que. The Nova Scotia mills and the Chicoutimi plant make groundwood pulp, while the other mills make sulphite. Some of these mills have changed hands several times and not all of them could be said to have been consistently prosperous, yet, as being interested in the Canadian pulp and paper industry, we resent the implication made in England, that the break in the Becker organization is directly attributable to the production or management of one of these mills. The situation in Britain, and elsewhere, in which the larger organization was considerably involved has been far from stable and prosperous, and the Canadian plants could not be expected to carry the load that short time operations and poor markets put on the mills in Great Britain and Ireland. On the other hand, we have the feeling that Canadian pulp has been a big factor in tieing things together and keeping the wheels turning. Given half a chance, Canadian pulp can more than hold its own in a competition of merit, and Sir Frederick Becker deserves much credit for linking up Canadian pulp with British paper. He has tied in a number of factors, which in normal times would seem a perfectly sound and profitable procedure, resulting in a self-contained organization. But the amalgamations may have brought in their own burdens, as they have done on this continent in the way of unproductive overhead as salaries of "dead-heads" required to be carried over from the ownership or staffs of the original concerns, and of antiquated equipment.

Sir Frederick is a strong and resourceful man, and will, no doubt, bring order out of chaos, and, by concentration, accomplish a crystallization of such profitable factors as remain in the situation.

TRADE WITHIN THE EMPIRE

It is no disrespect to the other Premiers of the Overseas Dominions to say that General Smuts, the Premier of the Union of South Africa, is easily the outstanding figure among them. He is marked out for that position, not only by his unequalled experience in the responsible conduct of public affairs of the first magnitude, during the most momentous period in modern history, but also by his proven sagacity and capacity, combined with very unusual gifts of clear thought and concise expression. And, at the opening session of the Imperial Economic Conference, he went, characteristically, to the core of the inter-Imperial trade question and showed along what lines the solution of that much-canvassed problem should be sought.

Addressing himself to Sir Philip Lloyd-Graeme, president of the British Board of Trade, he said; "The assumption of the American debt seems to me to be an event which is bound to call for reconsideration of many of your old policies. The United States has not only erected a high tariff wall around her frontiers, and debarred many of our products from going to her, but she now claims, and rightly claims, payment of a very large amount of money annually from this country. The necessity under those circumstances is forced upon this country to develop the Empire as far as possible, to turn its attention to those portions of the Empire especially which are capable of great development, and of producing those articles which in great quantity you still take from America. You have mentioned the matter of cotton. Cotton is a raw material which in the largest quantity we still take from the United States, but that is not the only raw material which we take from her. She supplies us not only with cotton, but very largely with copper, and very largely with tobacco. In fact, she has supplied us, and still continues to supply us with a very large number of different raw materials which the Empire is perfectly capable of producing if properly developed."

Premier Smuts had previously sounded emphatically the right note in laying stress on the great urgency of securing a settlement in Europe. This is a matter with a very direct bearing on the subject of inter-Imperial trade. At the best, any outlet Great Britain can find for her manufactured products within the Empire will not be sufficient for her needs, in the light of the gigantic task she has undertaken as regards the repayment of the debt to the United States. On this head Premier Smuts spoke words of wisdom. "I fear," he said, "that unless there is a real recovery in the world, unless you can succeed in re-establishing the trade and commerce of the world, you may find you have undertaken an intolerable burden for this country. Our duty, therefore, is to move heaven and earth to have peace re-established in Europe." He added that it was a policy of desperation to suppose that Europe could be left alone in her present stress. "You cannot have even the possibility of paying the American debt, unless you can restore peace ful conditions in Europe."

For our part, we are persuaded that, unless peaceful conditions in Europe are restored, we cannot have that adequate extension and expansion of inter-Imperial trade for which we are looking. For a really full development of inter-Imperial trade is, and must necessarily be, dependent, to a great extent, at any rate, on the restoration of conditions approximating to the normal in other parts of the world. Any view of the question which does not have regard to this fact is a very short-sighted view.

By this we do not, of course, mean that the fostering of trade within the Empire shall be postponed to the restoration of conditions approaching the normal elsewhere. On the contrary, it is absolutely certain that the energetic development of Imperial resources and inter-Imperial trade ought to be taken in hand forthwith, and that, if it is so taken in hand, it will be bound, in the long run greatly to assist, even though indirectly, the restoration of those other markets, the present limitation of which is affecting so adversely the purchasing power of the whole British Empire. And here, again, we are faced from another angle with the necessity for the energetic developmnt of Imperial resources. For, aside from those difficulties which are especially political, the reconstruction of Europe depends largely on the provision of capital, and this, in its turn, will depend on the extent of world production. In other words, the great need will be for an increasing volume of basic and essential commodities, and much may be done to supply this need by increasing the production and facilitating the marketing, of the raw materials found so abundantly within the Empire.

THE POWER SHOW

We are living in an age of exhibitions of all kinds, The idea of showing a number of related, even competitive, products in a public display has grown to occupy a definite field of very successful educational and advertising efforts. Enough popular presentation of facts relating to products and processes, by lectures, moving pictures, etc., to attract and instruct the public. This is good business, since the more a person knows about the product he uses, the more interest he has in it, and the more effectively will it be employed. Satisfaction will come from such intelligent use and fewer complaints will be made.

Another feature, and perhaps the most important one, is the opportunity for the man who is contemplating erecting, extending, or altering a plant to take his engineer and see the equipment he needs, examining it and its maker on all points relative to the use to which it may be put. A careful survey will thus often reveal possibilities for service — or otherwise — unsuspected by the manufacturer, as well as acquainting the purchaser with the whole field, enabling him to make an intelligent selection of equipment. To get just the thing for the requirements, and to avoid getting something that may fail to give 100 percent service, is well worth the cost of a visit to an industrial exhibition. A saving of $60 a year will pay a 6 per cent dividend on I,000.

There is also much to be said for the value of keeping abreast of the times by seeing what is being done in the way of technical development of processes and equipment and in the perfection of products.

Probably no phase of industrial activity offers greater opportunities for saving money and material than the making of steam and the handling of material. The aggregate loss due to inefficient generation and use of power is enormous. The Power Show at Grand Central Palace New York, Dec. 3-8, will exhibit latest fuel, material and labor saving devices along these lines.

THE TRUTH

The truth is gradually and persistently being hammered into the heads of the Canadian people that "we must save our forests". The evidence before the Pulpwood Commission shows conclusively that fires must be stopped and forest management vastly improved.

Our sincere congratulation to Mr. L. R. Wilson, the new General Manager of the Abitibi Power & Paper Co. His own strength and charm and his long association with the company fit him admirably for his new position. We wish him and his company continued success.

Heat Losses in Pulp And Paper Mills[1]

One of the greatest sources of waste in pulp and paper mills is the loss of heat in the various departments of the plants. It is often difficult to trace, especially when adequate measuring equipment is lacking. The steam and power used in the average paper mill represents from one-third to one-half of the conversion cost of the product, and in consequence any continuous loss is a serious matter.

These heat losses, in some form, are found in nearly every department of the mill from the coal pile to the finished product. A majority of them are preventable by study and close control of the heating problem, and their elimination may bring about a material reduction in the cost of making paper. The principal departments in which savings may be effected are the steam plant, chemical pulp mill and the machine room of the paper mill. Appreciable losses also occur in the heating systems throughout the entire plant.

In the following review an attempt is made to point out the most important sources of heat loss and also to suggest possible remedies. Many of the subjects have been discussed by the Heat, Light and Power Committee and in various articles and trade papers. However, this subject is now treated from a heat loss standpoint, and an attempt is made to co-ordinate the available information.

Steam Plant

With the high price of coal and the increased cost of operation, the steam plant has been receiving more attention the last few years than in the past.

Walter N. Polakov, a well-known combustion engineer, recently made the following statement: "The application of scientific methods to firing our boilers can save some 150 million tons of coal per year, now wasted shamelessly, for the want of such knowledge by firemen in this country."

The principal losses in a boiler house are due to the following causes:

1. High flue gas temperature.
2. Radiation from the furnace and boiler.
3. Air leaks in the boiler settings.
4. Combustible in ash.
5. Moisture in coal and air.
6. Excessive blow-downs.
7. Inadequate utilization of exhaust steam and condensate.
8. Leaky valves and traps.
9. Radiation from pipes.

(1) The high temperature of the dry flue gases caused by poor settings, leaky baffles and other defective conditions, may be much reduced by the use of economizers and other equipment. In well operated boiler plants the flue gas temperature does not average above 400 deg. F. It has been estimated that every 100 deg. F. rise in flue gas temperature is equivalent to a 4 per cent loss in fuel. Closely allied to the temperature of the flue gas is the control of excess air necessary to obtain the best combustion. The best plants are able to operate with 20 or 25 per cent excess air and 35 per cent is the maximum that should be allowed under any operating conditions.

(2) Radiation from the furnace and boiler is often overlooked in small plants. This is a loss that is continuous and often amounts to 3 or 4 per cent of the total available heat in the coal. The use of special firebrick, water screens and air cooled walls have been important factors in reducing these radiation losses

The problem of preheating air using stack gases and the heat from the furnace walls has received considerable attention in Europe and is doubtless one of the future power plant developments of this country. It should be possible to make material savings by preheating air with equipment such as the Ljungstrom air preheater or by the use of air ducts in the furnace setting.

(3) Air leaks in boiler settings are unpardonable and make it almost impossible to operate boilers efficiently. This loss is ascertained through regular systematic inspections and can easily be rectified by the mechanical department. Various coatings are used which materially assist in covering the small leaks and at the same time reduce the radiation losses.

(4) The loss due to combustible in ash varies greatly with the grade of coal, type of furnace and method of operation. The study of this problem involves almost every factor of operation. The average plant may easily lose 4 or 5 per cent of the total available heat because of the unburnt coal that goes into the ash pit.

(5) Moisture in coal is a source of some loss, although this may be largely a storage or purchasing problem. The difficulty due to moisture in the air may be partly overcome by special storage methods and periodic checks on the moisture content of the coal.

In recent years the utilization of barking drum refuse as fuel has received considerable attention. In the work of the Waste Committee last year it was pointed out that its efficiency as fuel is greatly increased by reducing its moisture content by pressing. In Europe, refuse and wet bark are dried by using the heat in the dry chimney gases, but this method has not yet been adopted in this country.

(6) The heat lost in blow-downs is of especial importance where very hard or impure water is used. Mills that are fortunate enough to have a supply of pure water for their boilers are able to keep them clean by blowing them down once a week. In hard water sections treatment of feedwater is very important, and often it is possible to pay for a feedwater treating plant in less than two years. Many boiler compounds are on the market, and some materially assist in reducing the amount of scale. The question of scale and blow-downs is a distinct problem in each plant. Many plants use a recording thermometer on the blow-off to how the number and duration of the blow-downs. This serves as a check and also indicates leaky blow-off valves.

Scale is an effective insulator and causes inefficient boiler operation. It has been estimated that a scale of the ordinary thickness up to 1-8 in. may cause a loss in heat transmission of from 1 to 10 per cent, depending upon the individual conditions of the boiler.

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[1] From Progress Report of the Committee on Waste, Technical Association of the Pulp and Paper Industry.

(7) The complete utilization of exhaust steam and condensate is very essential to economical operation. All water containing heat should be sent to the feedwater system with small loss of temperature. Where the condensate is above 212 deg. F. it may be returned to the boilers or economizers by direct return steam traps. This applies particularly to the condensate of the paper machine driers.

The development of feedwater heaters has been an important factor in increasing the efficiency of boiler plants. The feedwater is purified to some degree as well as heated, and enters the economizer or boiler at a temperature that makes possible higher efficiency. The importance of high feedwater temperature is indicated by an authoritative estimate that every 11 deg. F. rise in the feedwater temperature is equivalent to 1 per cent in fuel saving.

(8) Losses due to leaky valves, pipe joints and traps are often overlooked, especially when located in inacessible parts of the plant. A very small leak will result in an appreciable loss in the course of a month or a year A steam leak 1-8 in. diameter will cause a loss of over 12,000 lb. of steam per month at 100 lb. pressure. A steam leak 3-8 in. diameter at the same pressure will waste 460,000 lb. of steam per month, which at 60 cents per thousand pounds equals $276. Defective and incorrectly placed traps are also a source of heat waste and are not given sufficient attention.

(9) Losses due to radiation occur to some extent in the boiler house as well as throughout the entire plant. These losses are caused not only by poorly covered or bare steam pipes, but also by hot water pipes that do not have proper insulation.

Among the important developments in the field of combustion engineering that result in a saving of heat or in a higher efficiency are the use of fuel oil and powdered coal. The results from various paper mills which use fuel oil indicate that it is possible to maintain a higher boiler efficiency with comparative ease than is possible in the ordinary hand or stoker-fired plant. The use of powdered coal is a recent development, and is very similar in operation to that of oil because the pulverized fuel burns as gas and the combustion is nearly complete.

Operating data in one oil-burning plant show an average efficiency of approximately 84 per cent. The results in burning powdered fuel at the Lakeside plant of the Milwaukee Light and Railway Company indicate that it is possible to operate at an overall efficiency of nearly 85 per cent.

The relation of "per cent overall efficiency" to dollars is easily illustrated. The coal consumption of a 100-ton paper mill is approximately 3,000 tons per month, and the steam plant efficiency may vary from 60 per cent to 75 per cent. The following table indicates the possible approximate monthly and yearly saving for a 5 per cent increase in efficiency with coal at the cost indicated.

Increase in efficiency	Coal cost per ton delivered	Saving from increased efficiency	
		Per month	Per year
5%	$ 5.00	$ 750	$ 9,000
5%	7.50	1,125	13,500
5%	10.00	1,500	18,000

One of the most important factors in obtaining a high efficiency is the use of the improved equipment that is available. Economizers, superheaters, stokers, feedwater regulators, soot blowers, draft regulators. and other equipment assist the operator in more completely utilizing the available heat in coal. The use of steam flow-meters and other recording instruments greatly assists the engineer and firemen in obtaining high evaporating efficiency. Boiler meters of the Bailey and Republic type that record the steam flow and air flow on the same chart make it possible for a fireman with even limited knowledge to maintain the best combustion conditions.. A permanent record is made, and the recording chart serves as a check on operating conditions day and night. The recording CO_2 meter is also a valuable instrument in the steam plant.

Much experimental work has been done on the mercury boiler although as yet it has not been developed on a commercial basis.

High pressure steam accumulators are being extensively used in Europe, and during the past year have been installed by one of the large paper companies. This equipment absorbs the temporary and excessive steam demands and results in an increased steam plant efficiency.

Sulphite Mill

The major part of the steam consumed in the sulphite process is used in the digesters. The cost of steam per ton of pulp produced varies from $4 to $8, depending upon the grade, operating conditions and other factors.

Probably the greatest source of heat waste in the sulphite mill is in the blow-off steam which is usually exhausted to the atmosphere.. Some attempts have been made to reclaim a portion of both heat and chemicals by special condensing towers. The cost of the necessary equipment is quite large, and the value of the reclaimed heat and chemical is not sufficient to justify the economical application of this method except, perhaps, in large plants.

One of the most recent developments in the reclamation of heat in the cooling process is the "Decker system," which diverts the relief gas and liquor into a spare digester filled with chips and fresh acid. This reclaims much of the heat as well as some of the relief system are sometimes the addition of an extra acid. The only changes necessary to use this system are sometimes the addition of an extra digester and a slight change in cooking methods.

The use of the steam flowmeter for cooking control has been found to result in a reduction of steam consumption.

Another source of heat loss is the radiation from the digester shell which has been estimated to be ¾ to 1 B. t. u. per hour per degree difference in temperature per square foot of surface. It is now possible and practicable to cover digesters with insulating material in the ferm of asbestos mats.. They are made in sections about 7½ by 3 ft. that conform to the shape of the digesters.. Each section is held by hooks at the butt straps of the digester and adjacent sections are laced together with copper wires. When it is necessary to inspect the digester shell, the wire is removed and the lower edge of the mats swung out. By the use of digester insulation it is possible to reclaim much of the radiant heat, although a portion of it is necessary to heat the building during the winter months.

A conservative estimate of the radiation losses from a 10-ton digester is 7,000 to 8,000 lb. of steam per day which at an average cost is equivalent to from $4 to $5 per 24 hours.

Soda and Sulphate Mills

The heat loss in the blow off of the digesters in soda and sulphate mills is similar to that of the sulphite process, although some attempt has been made to reclaim the heat by means of a condenser.

The application of the Decker or a similar system may be possible in the case of stationary digesters so that a portion of the heat in the relief steam may be reclaimed.

The heat lost by radiation from the digesters in the soda and sulphate processes is greater than in sulphite because no lining is used and higher pressures prevail. It has been estimated to be about 3 B.t.u. per hour per degree difference in temperature per square foot of surface or nearly three times the radiation from sulphite digesters.

Further losses in the sulphate and soda processes occur in the smelting furnaces, rotary burners and evaporators. Waste-heat boilers have been used quite successfully to reclaim heat from the smelting furnaces and rotary burners.

Paper Mill

Probably the greatest loss in most paper mills is the heat going out the machine room roof in the form of vapor from the driers. The control and reduction of this loss are closely allied to the ventilating problem. The waste-heat economizers, which heat the incoming cold air by the condensation of the outgoing vapor, reclaims about 85 per cent of the heat from the machine room vapor. They have been installed by a number of mills and are more effective in cold weather when the steam requirements of a paper mill are greatest.. Various methods have been tried out to reclaim the heat in the machine room vapor, including the use of a spray of water on the outgoing vapor. Future developments may bring out other effective heat-reclaiming systems.

The various drying systems for paper machines are based on the complete circulation of steam and the efficient utilization of the condensate. The use of automatic apparatus to control drying helps to prevent the excessive use of steam and the over-drying of paper.

The temperature in the machine room is very high, consequently the radiation of heat from the roof and walls is an important source of loss.. Some modern mills have adopted the gypsum roof with good results.. A few mills have used a special insulating material in combination with a wood or a concrete roof. Various tests indicate that the heat transfer in a 3 in. roof will be approximately as follows:

Heat transfer in B.t.u. per hour per degree difference in temperature per square foot of surface:

Concrete	0.65
Wood	0.32
Gypsum	0.22
Concrete (with two layers of insulating material)	0.24
Wood (with two layers of insulating material)	.017

Assuming an average temperature differential of 45 deg. F. between the machine room and outside air and an average over-all efficiency of coal utilization of 6,800 B.t.u. per pound, a saving of 0.41 B.t.u. by using two 3/8 in. layers of insulation on a concrete roof is equivalent to nearly 12 tons of coal per year per 1,000 sq. ft. of roof surface. Moreover an insulated concrete or wood roof would have less tendency to drip and the wood roof might easily last several years longer due to more favorable atmospheric conditions and less sweating.

Another important source of heat loss is the use of excess air in ventilating the machine room. Every cubic foot of air that goes through the monitors must be heated from the temperature of the outside atmosphere to that of the vapor discharged through the roof. Any excess air causes inefficient operation in carrying the moisture away from the paper machine and consequently results in a loss of heat. This is an engineering problem that involves the use of hoods and ventilating equipment to suit the conditions.

General Mill Losses

Many small heat losses occur throughout the entire plant that amount to an important total in a year's time. Leaks from valves and piping, waste of condensate from small engines, heating systems, losses due to radiation from uncovered steam and hot water pipes and losses due to faulty design and construction of buildings and equipment are common.

The insulation of bare pipes except the main live steam lines is often overlooked. The following chart is based upon the results of an extensive investigation on the heat losses of bare pipes made by the Mellon Institute. The losses are converted to pounds of coal per month per 100 lineal feet of bare pipe at varying temperatures and pipe sizes.

JAP PAPER MILLS ESCAPED

The Japanese paper mills entirely escaped damage from the September earthquake, according to T. Seki, secretary of the Association of Japanese Paper Mills, acknowledging a letter of sympathy from Dr. Hugh P. Baker, executive secretary of the American Paper and Pulp Association.

Mr. Seki's letter follows:

"I am in receipt of your kind letter of September 6th extending deep sympathy to the paper industry of Japan. The office building in which we have our headquarters is in a business section remaining undamaged, constituting an oasis so to speak. This will give you an idea of devastation caused by the earthquake and fire of September 1st.

"You will be pleased to know that not a single paper mill in and near Tokyo was destroyed by fire. All the mills in what may be called the earthquake zone were badly shaken, but they are all now in operation. The Tokyo offices of a few paper companies were burned down, but so far as the manufacturing capacity is concerned, the paper industry is very much better off than many other lines of industries.

"The relief measures taken promptly and efficiently by the American Government and people are highly appreciated in this country. Our people are facing the situation bravely, and I'm confident that a new city that will rise within a few years will be better than the old one in many ways."

CONFUSION IS THE WORD

Confusion exists in some American minds between Sir Caine, the Novelist, and his son, Mr. G. R. Hall Caine. For example, it is suggested that because "Hall Caine is writing a life of Christ he will for a time be less active in pulp mills and outputs in Europe and Canada."

—Exchange.

SLACKNESS IN GERMAN PAPER INDUSTRY

The production of paper and paper pulp in the different countries has undergone considerable change since 1919 on account of the greatly increased international demand for paper, and the changed basis of raw material supplies. Prior to 1914 Germany imported a large amount of pulpwood from Russia, and the stoppage of supplies from this source afterwards greatly hampered production. It still imports about 40 per cent of its pulpwood requirement from abroad now.

The chemical pulp factories are using foreign wood to 70-80 per cent of their production, and the grinding mills working with steam power about 20 per cent, while the water-driven mills, which are mostly smaller works situated in the forests, use home supplies. The total German consumption of pulpwood amounted to about 2,800,000 tons during 1922 compared with 3,040,000 tons during 1913. The mechanical production of paper pulp totalled 610,000 tons and 674,000 in 1922 and 1913 respectively, that of chemical pulp 721,000 and 839,000 tons. In spite of this decrease, last year's production of paper attained with 1,582,000 tons, nearly the 1913 figure (1,611,000 tons) which was possible owing to the restrictions in the export and to the improvements in he methods of manufacture.

The imports of raw material and pulp have considerably increased since 1919 and the table shows the development in comparison with 1913:—

Imports in metric tons (2,204 lbs.)

	1913	1920	1921	1922
Pulpwood	1,284,873	127,011	310,365	852,468
Rags	61,731	7,350	8,440	17,680
Waste paper	24,278	3,844	8,980	21,264
Wood pulp	3,622	10,068	1,399	2,254
Cellulose	51,320	54,801	36,963	69,761

During 1913, 1,021,776 tons of the pulpwood came from Russia and 260,306 tons from Austria-Hungary, while in 1922, 323,552 tons were supplied by Czecho-Slovakia; 314,338 by Poland; 102,375 by the states on the Baltic and 81,999 by Finland. The rags are supplied by France, Belgium and Holland. Owing to the high exchange, Sweden and Norway, which formerly supplied more than two-thirds of the German imports of cellulose, supplied only one-third last year. One third came from Finland and the rest from Memel, Czecho-Slovakia, and Austria.

The exports of pulpwood, waste paper, and wood pulp are insignificant, those of rags for the manufacture of paper are reduced from 82,655 tons sent abroad during 1913, to 51,091 tons during 1922. The main customer is the United States. The total export of cellulose was almost 50 per cent less than in 1913, and especially demand from Great Britain is very small now. The table shows the exports of cellulose in metric tons to the different countries.

	1913	1922
Total exports:—	179,463	73,330
Exports to France	41,014	20,687
Great Britain	36,297	2,852
U. S. A.	35,247	19,569
Italy	23,601	11,309

On account of the greater foreign demand, the total exports of paper have increased while inland consumption has been smaller.

Paper exports 1913-1922 in metric tons.

	1913	1922
Total exports of paper	344,168	417,456
Exports of packing paper	84,863	71,239
Exports of writing paper	18,064	30,754
Exports of printing paper	68,749	148,202

France, Italy, Spain, U. S. A. and Argentina which imported comparatively small amounts of printing paper during 1913 imported large quantities last year, while the demand from Great Britain has diminished considerably. In packing paper Great Britain remained the principal market with 32,478 tons in 1913 and 20,760 in 1922. Holland is second in this line, but in several others it is the best customer of the German paper industry. At present home and foreign demand is low and many works are on short time and some have even closed down.

Exports of printing paper in metric tons.

	1913	1922
Great Britain	16,072	4,640
France	227	17,407
Italy	73	15,310
Spain	255	5,833
Holland	8,631	9,622
U. S. A.	956	29,777
Argentine	15,626	32,325
Brazil	7,714	3,206

The export offices for paper are abolished, and no export duty is charged in future.

PLAN THREE NEW DAMS

Quebec, November 12.—Three new dams will be built shortly in the province of Quebec if the plans of certain companies materialize and the permission of the Provincial government can be secured. The construction of one of the dams will necessitate the erection of a large hydro-electric plant in the town of Chicoutimi, and will contribute greatly to the development of that region.

Price Brothers Company now has the plans for the largest of the dams under consideration, and it is expected that the work will go forward shortly.

POLYTECHNIC STUDENTS VISIT LAURENTIDE

Students from the polytechnic school of the University of Montreal visited Grand'Mère at the invitation of the town manager, recently. Mr. Ortiz is a distinguished alumnus of the school and he interested himself in showing the young men the town and particularly the mill. Mr. H. E. Bates employment supervisor of the Laurentide Company, received the party for the Laurentide management.

The visitors arrived in Grand'Mère at eight o'clock and were met by a group of citizens who took them in motors to the pumping station of the municipal water works and to other points of interest in the town. A short stop was made at the Laurentide club for refreshments and Mr. Bates gave the party a short talk on the place of the newly graduated young man in industry and told of some of the opportunities waiting for those who were prepared to begin at the bottom of the ladder.

Mr. Bates had provided guides for a trip through the mill and after the party had thoroughly inspected the various departments lunch was served in the cafeteria. The visitors had another short run about the town and left on the afternoon train.

They were also entertained by the Belgo Paper Co. at Shawinigan Falls, where they saw one of the widest paper machines in the world, and the one that holds the production record of 96.11tons, in operation.

IT APPLIES TO ALL

A pessimist and an optimist were discussing life from their different viewpoints. "I really believe," said the former, "that I could make a better world myself."

"Sure!" returned the optimist; — "that's what we are here for. Now let us get to work and do it."

The Controlling Factor in the Earning Power of an Individual

An Address at the 50th Anniversary of the Founding of Boston University, by Col. Leonard P. Ayres, Vice-President and Economist, The Cleveland Trust Company

Note: Before his address Col. Ayres was given the honorary degree of Doctor of Commercial Science, a title hitherto unknown in the field of education. Col. Ayres thus becomes the second man to be so honored by Boston University, the only other title ever given by this university having been conferred on Marshal Foch.

In the bank where I am employed there are two young men. They are of about the same age, were graduated from the same college, and they both have been employed by the bank about the same number of years. Both come from families of respectable, but not distinguished, social status in the community. I believe that if both were to take an examination in their knowledge of banking, their marks would be about equal. One of these men receives a salary of $3,000 a year, and the other gets $23,000.

Similar cases of contrasts in earning power, although usually not so extreme, are within the knowledge of all of us. They are brought to our attention with special emphasis during class reunions. In the midst of the friendly reminiscences of those occasions there is always intruding upon the thoughts of those present the same baffling problem. That problem is why some of the classmates have attained much more generous measures of material success and social reward than have others during the years that have elapsed since all started out after graduation with apparently about equal opportunities. In practical terms the problem is this: What is the controlling factor in the earning power of individuals?

I believe that there is such a controlling factor, and that it consists in the ability to influence the actions of others. It may be described more fully as the ability to see things from the other person's point of view, and to persuade the other person to see things from your point of view.

I am sure that it is because one of the two young men in the bank possesses this quality in large measure, while the other one does not, that one of them receives, and earns, so much more than the other.

From time to time the bank must be represented on a creditors' committee. This means that some large borrower, who owes money to a number of banks, has got into financial difficulties, or become insolvent, and a committee is formed of one representative from each bank to try to get their loans paid back.

Now if our institution should appoint as its representative the first of those two young men, he would probably come back from the committee meeting and tell us how the assembled vice presidents of the other institutions had persuaded him that all their claims should take precedence over ours. He would present our claim and the others would proceed to talk him out of it. Because of this it is the second young man who represents the bank on such committees, and when he reports back we invariably find that our interests have been taken care of most adequately.

But this does not sufficiently explain the difference between the two men. The second young man is more than a good bargainer. He is universally liked by the employees, the officers, and the customers. He is a good executive, because people like to work with him, and is successful in getting new accounts, because customers like to to do business with him. His outstanding quality is his ability to deal with people, and it is because he possesses that quality in unusual degree that he receives his large salary.

If we analyze carefully the reasons for the different grades of remuneration within the same profession, I think we shall find that those who receive the highest salaries usually owe their success primarily to their skill in dealing with people, and only in secondary degree to their knowledge, or to their intellectual capacity to deal with abstract concepts. This principle is well illustrated in my own profession, which is that of statistics.

There are many good statisticians in this country, and most of them are not very well paid. But from time to time some member of the profession demonstrates his ability to write about his investigations interestingly and convincingly, and when he develops that power he immediately moves into a higher salary range. That man is often no more skilled in statistics than he was before, but he has learned to use his material so as to influence others, and that has increased his social value and his earning power.

If now, he continues to develop his powers of exposition so as to illustrate his material with clear and persuasive diagrams, his earning power will again advance. If he can go still further, and master the art of public speaking, so as to explain statistical material with lucid brevity, he will shortly find himself numbered among the highly-paid members of his profession.

Similar examples of the operation of the same principle will be found in other professions. The clergymen who receive the highest salaries are not those who have the most profound knowledge of theology, nor are the lawyers who are able to command the highest fees those who write the most learned treatises on law. Even in the cases of professions that demand the highest degrees of technical knowledge and skill, such as medicine and surgery, the talent for human relationship appears to be a dominating factor in determining material rewards and social recognition. Famous physicians like Flexner of the Rockefeller Institute, the Mayo Brothers of Minnesota, and Crile of Cleveland, owe their world-wide pre-eminence partly to their great knowledge and skill, and in no small measure to their extraordinary ability in keeping other people well informed as to their achievements.

Even in manufacturing industries illustrative cases of the same sort continually appear. The father of one of my assistants acquired a small varnish factory many years ago in partial payment of a bad debt, and found among the assets a barrel of gum that had been sent North by an exporting house in the Tropics to find out whether it was of any value. He soon decided that it was no good as a constituent of varnish, and entered upon a prolonged series of experiments to see whether or not it could be manufactured into chewing gum.

Eventually he found out how to flavor it, and he invented machines which rolled it into strips and wrapped them in packages so that the product was a commercially successful confection. After the new business had been run in a modest way for some time he sold it and his machines to a Chicago man named Wrigley, who proceeded to tell the whole world how the flavor lasts, and rapidly built up a great fortune from the resulting proceeds. It was the father of my assistant who had the knowledge and technique, but it was the gentleman from Chicago who had the ability to influence the actions of his fellow beings, and who reaped the rewards.

In some fields of human endeavor the rewards that go to the man of surpassing skill are almost absurdly great, but these highest prices are paid only for the exhibitions of ability that are of such a sort as profoundly to stir the emotions of those who pay to be present. The champion heavyweight pugilist may receive a half a million dollars for a few minutes of strenuous work. His training partners, who are nearly as adept as he is, may, if they are fortunate, receive one one-hundredth as much for taking part in a similar contest, and their training partners in turn will probably be forced to supplement their earnings in the ring by hard labor as stevedores or safe movers in order to support themselves.

And yet all of them possess skill so nearly in the same degree that the ordinary man watching them training in the gymnasium, would probably be unable to tell surely which one was the champion, which ones the aspiring contenders, and which the hopelessly outclassed assistants. The spectators who buy high priced tickets to attend the championship contests do not pay in proportion to the skill of the contestants, but rather because they are thrilled with the thought that they are privileged to see the man who in a fair fight could beat any other man in the world. The earning power of the champion is not proportionate to his skill. It is due to the fact that he has a little more skill than his rivals, and because of that fact is able to influence for more profoundly the deep emotions of his fellow beings.

Similar comments might be made concerning the earning power of singers, actors, and artists, for these too are members of professions in which the ablest members receive very high compensation, while others almost as skilled can earn only a fraction as much. These illustrations, however, are not truly appropriate to the present discussion, for the matter we are considering is the controlling factor in the power to earn, and not the extraordinary variations that exist in the higher ranges of exceptional sorts.

Now, it is to be noted that in all the cases that have been cited the sound basis of earning power is knowledge and skill in the daily work that is done, while the personal quality of high ability in human relationships appears to be an added factor which determines the degree of effectiveness with which its fortunate possessor may use his knowledge, and the price he may demand for what he does.

Ability to influence the actions of others is not a substitute for skill and knowledge, it is merely an important supplementary quality, which largely determines how effectively the possessor can take advantage of the successive opportunities that he has. The young man in the bank, the lawyer, the clergyman, the statistician, the doctor, and the manufacturer must all master the techniques of their jobs if they are to do them well. There is no substitute for that knowledge. But when that grasp and insight has been attained I think it will still be true that this additional quality that I have been talking about will be the conditioning factor that will determine the market value of the services rendered.

It is a great pity that we have in English no word or term which describes that quality. The Spanish have one. They call it the *don de gentes,* which means the gift of people, and they think of it as being a clearly definable characteristic like courage, or perseverance, or honesty. General Leonard Wood has the quality. A colonel in the Army told me about his first meeting with the General. It was during the Cuban occupation, and the Colonel, who was then a Lieutenant, took some documents into the General's office for his signature. In telling me about the meeting the Colonel said, "Ayres, I came out of that room feeling that General Wood was the greatest man in the world and that I was the next greatest." That illustrates what I mean when I say that the General has the gift of people.

During the war I served as statistical officer of the Army, and of several of the civilian war organizations. It was my duty to furnish a part of the fact basis for the thinking and acting of the military and naval and industrial leaders who met in conference in Washington and later on in France for the purpose of deciding on policies and taking steps to put them into execution. Because of the nature of that work it was my good fortune to be present at a great number of meetings in which the country's foremost military and industrial leaders strove to solve the hard problems of those trying days. These circumstances afforded an unusual opportunity to observe acknowledged leaders in action, and to attempt to discover what are the qualities of which leadership consists.

After much careful observation I came to the conclusion that, despite all the apparent contradictions of observable evidence, there are four characteristics that are shared in common by almost all real leaders.

In the first place, and as a solid foundation for their other qualities, they possess knowledge of the field in which they work. They do not always have greater knowledge of their own specialties than some of the other people engaged in the same occupations, but they do have general grasp and special technique sufficiently adequate to enable them to take advantage of the new opportunities that may appear or be brought about.

In the second place leaders have courage, and in part they have it because they know their jobs. The man who is doubtful is sure to be slow and timid, while the one who knows that he knows is prompt and courageous. But leaders have an additional sort of courage which consists in being willing to take a chance. They try to be sure about what is the best thing to do, and when that is impossible they act as though they were sure and go ahead anyway.

A third quality of leaders is activity, and this in turn is partly dependent on their store of general and special courage. They are continually doing something. If they do not know what to do in a situation that demands action, they do something. By doing something all the time, and being right most of the time, they get a great deal accomplished.

The fourth common quality of leadership is the one I have characterized as being the controlling factor in the power to earn. It is the gift of people. It is the ability to influence the actions of others. It is an effectiveness in contacts with one's fellow men. It is talent for human relationships. It might be termed a sort of social skill. In last analysis it might be described as the ability to see things from the other person's point of view, and to make him see things from your point of view.

The exercise of this quality largely depends on the ability to speak and to write. One thing that leaders can always do is to communicate their thoughts to others, and this is true even in those cases where they have the reputation of being characteristically taciturn. Because there is much talking that is aimless, and much writing that is not worth reading, we have many of us fallen into an attitude of disrespect toward skill in the use of language. And yet it is by the use of words that the human race has developed It is that which distinguishes man from the animals. We live in a world of words, and thoughts expressed in words, as the animals live in a world of things and memories of things. To the man who can express his thoughts in words so as to influence the rest of us, society gives its great rewards. The ability to say what we think is of value not only because it enables us to communicate our conclusions and convictions to others, but also because it aids us in the process of clear thought. It is true that sound thinking is usually thinking that has been turned into sound.

We are met today to celebrate the fiftieth anniversary of the founding of a great university. In the half century that has elapsed since the institution first opened its doors to students it has sent thousands of men and women out into the world to lead lives of useful citizenship, and among them very many who have attained to positions of distinguished leadership. From the beginning its educational policy has had a twofold aim. In its different schools it has afforded its students an opportunity to secure sound training in the liberal arts, and it has made it possible for them to be trained in the specialized techniques of the professions. In recent years it has greatly extended its sphere of useful activity. Its new colleges for the training of teachers, for education in secretarial science, and its wonderful School of Business Administration have attracted thousands of students because they have efficiently filled real needs.

With these developments there has come in Boston University a marked increase in what are known as student activities. Organized athletics, student publications, debating, social activities, and the conduct of fraternity and sorority life, have all assumed an importance quite unknown here even twenty years ago. I believe these developments are good. They can be overdone, and in some institutions they are indulged in to excess, but I believe that they have a greater educational value than most of us have ever realized.

I suspect that they are an expression of an unformulated, but keen, realization on the part of the students, that they need to supplement their growing store of knowledge with activities that afford training in their social relationships with other people. Viewed in this light, and guided with this purpose, I believe that they may be made to possess educational value of a most important sort. They tend toward the direct cultivation of the quality I have been talking about as the controlling factor in the power to earn.

To summarize then, the argument that I have attempted to present to you is that there appears to be at least four characteristics that are possessed in common by successful leaders. The first of these is an adequate foundation of general and special knowledge. The second is courage and this is partly dependent on knowledge. The third is persistent activity, which in part depends on the possession of courage. The fourth is the ability to influence people.

This last ability is more than one of the qualifications for leadership. It appears to be the controlling factor which determines earning power among people of many ranks of life and of diverse sorts of occupations, whether they are leaders or not. We have no adequate term to describe it. The Spanish call it the gift of people. It is a type of effectiveness in contacts with our fellow beings. It is a sort of a talent for human relationships. It seems in practical analysis to consist of the ability to see things from the other person's point of view, and to make the other person see things from your point of view. It is more than merely the controlling factor in the power to earn. Its fortunate possessor has the power to be an efficient citizen, and he holds the key to the durable satisfactions of life.

L. R. WILSON ABITIBI MANAGER

At a meeting of directors of the Abitibi Power and Paper Company, Limited, held here yesterday, Alexander Smith, of Chicago, was elected president of the company, replacing the late F. H. Anson. W. A. Black, vice-president and managing director of the Ogilvie Flour Mills Company, Limited, was elected vice-president of the Abitibi company, of which he had been a director for many years, E. L. Pease, vice-president of the Royal Bank of Canada, was elected a director, while L. R. Wilson, formerly secretary of the company, was appointed general manager.

The new president of Abitibi is head of the investment banking house of Peabody, Houghtaling & Co., of Chicago and New York. He has been identified with the company since its inception and is one of the two largest individual shareholders.

Mr. Black, the new vice-president, is prominent in local financial and industrial circles, with membership on many important boards.

L. R. Wilson, who assumes the duties of general manager, which had been executed by Mr. Anson, has been associated with the company from its beginning. He was first associated with Mr. Anson in the flour milling industry in New York in 1900, since which time they have been close personal friends.

About the time Mr. Anson came to Canada with the Ogilvie Flour Milling Company, Mr. Wilson went into the sugar business, and in 1912, when the Atlantic Sugar Refining Co., Ltd., was organized, Mr. Anson induced him to take the management of that company. The Abitibi company was organized at the same time and the construction of the two plants was carried on by the same organization, Mr. Wilson being the first treasurer of the Abitibi company.

In 1917 he resigned from the sugar company to devote all his time to the Abitibi company and has been active in its management from the time the first woods were cleared from the present mill site. Four years ago Mr. Wilson became a British subject.

GREAT LAKES PAPER CO. UNDER WAY

Fort William, Ont., Nov. 7.—Erection of the huge plant of the Great Lakes Paper Company at the western limits of Fort William has passed the preparatory stages and actual work in under way on the foundation. With a continuation of good weather the work will be so well advanced by Christmas that it can be carried forward all winter, as is the present attention.

In he meantime the Hydro Commission is carrying forward the work of delivering hydro power, a big block of it, at the sub-station from which the new plant will be served. Material is being ordered and some special work is being done on the main line, which connects the Cameron Falls development with the head of the lakes.

MORNING PAPER IN MOOSE JAW

The Evening Times, of Moose Jaw, makes the announcement that, commencing November 20, it will publish a morning paper to be known as the Times-Morning Herald. The new paper will replace the early mail edition of the Evening Times.

BECKER & COMPANY, LTD.

(Special From Our London Correspondent)

October 27, 1923.

With much regret I have to announce that yesterday an application was made, before Mr. Justice Tomlin, in the Chancery Division, of the Courts of Justice, on behalf of the National Provincial and Union Bank of England, Ltd.,—trustees of the trust deed securing the debenture-holders and holders of secured notes—for the appointment of a receiver and manager to Becker & Co., Ltd., the well-known London wood pulp importers. Counsel for the bank explained to the judge that the company had pulp mills in Canada and had arrived at a crisis owing to the failure of a certain Canadian company to meet its liabilities.

The judge, without demur, granted the application.

Secretary's Statement

After the court had made the appointment the following statement was issued by Mr. William Carter, secretary to Messrs. Becker & Co., Ltd.

"Sir—I enclose a copy of a circular letter issued today by the receiver and manager of this company.

'Having regard to the difficulties which are being experienced by many of the paper mills owing to the Great trade depression and their consequent inability to meet accounts promptly, my directors are of opinion that the action taken is in the best interests both of the creditors and shareholders. My directors wish to state that with the return next week from America of our chairman and managing director, Sir Frederick Becker, they have every reason to anticipate a scheme will be formed practicable whereby the company can be satisfactorily reconstructed. Having regard to the great confidence imposed in the company in the past, we feel it is due to those who have had business relations with us that this explanation should be given.

"We trust that during this period of difficulty customers will favor the receiver and manager with a continuance of their orders and support. Yours truly, Becker and Company., Ltd., (signed) Wm. Carter, Secretary."

Receiver & Manager's Statement

"Dear Sir—By an order of the Court dated today, I have been appointed receiver and manager of the assets and property of the above company (Becker & Co., Ltd.), on behalf of the First Debenture holders and of the seven per cent 5 years secured notes. The business will be carried on by me with a view to reconstruction and it is hoped that the creditors will eventually receive payment. Please note that payment of any moneys which may be owing to the company as well as payment for any future supplies should be made direct to me in the ordinary course of business at the address below. Should you hold any documents, scrip, or other security on behalf of the company, I should like to receive particulars, and in the meantime they should be held to my order. Orders for goods will in future be signed by me or an authorized representative and payment for goods so supplied will be made by me in the usual course of trade.—Yours faithfully, (signed) Basil E. Mayhew, Receiver and Manager 30 40 Ludgate Hill, E. C.

Like a Bombshell

The news of the receiver and manager having been appointed spread like lightning throughout London pulp and paper circles and, needless to say, everywhere there were expressions of regret. Sir Frederick Becker has been in Canada and America on business since July last and I understand he is now on the Atlantic on his way back to face the turmoil in London. The general feeling at present is that Sir Frederick will put things right. He is a great organizer and there is sympathy for him Not only has he been the pioneer of Canadian pulp in the British market but in the past he has done a lot for Dominion pulp sellers. It is largely owing to his ingenuity, his perseverance, and his excellent reputation that Canadian pulps enjoy the good name they do today in British circles. Therefore, Canadians may take their hats off to Fred Becker and sympathize with him in the turn business has taken in London.

Receiver Appointed for Charles Marsden and Sons

London, Oct. 31, 1923

Today in the Chancery Division, before Mr. Justice Tomlin, an application was made on behalf of the National Provincial and Union Bank of England, Ltd.,—trustees for debenture holders—for the appointment of a receiver and manager in respect of Charles Marsden & Sons, Ltd., paper manufacturers, who, counsel for the applicants said, were one of a group known as the "Becker Group."

Counsel said that Charles Marsden & Sons was not a subsidiary company, but he did not know what the connection was. It was, however, a paper mill company and not a merchanting company. There were two issues of debentures, 7 per cent first mortgage debentures and bebentures, issued in connection with what was known as Chadwick & Taylor debenture.

The New Manager

The new manager appointed is the same gentleman as in the case of Becker & Co., Ltd., viz. Sir Basil Mayhew of the firm of Blackburns, Barton, Mayhew & Co., As a court Receiver he will look after Marsden's & Becker's. Marsden & Sons have places in Sheffield & London and their mills are situate at Barnsby, Tamworth, Wakefield and Newcastle. Sir Basil Mayhew desires it to be known that it is intended to continue the running of the mills at present working at Barnsley and Tamworth and that he has been appointed with a view to protecting the interests of all parties.

Becker & Co. Ltd.

Becker & Co., (Ltd.) were registered in 1908 to acquire a business of wood pulp merchants and agents carried on under a similar name. They hold controlling interests in companies operating at home and abroad including Marsdens. They also hold the shares of the Clyde & Sissibo pulp and power company. The paid up share capital of Becker & Co., is £500,000 and recently there were £198,000 of debenture stock and £300,000 of notes outstanding. For each of the four years ended 1919 a dividend of 8 1-2 per cent was paid on the ordinary shares, following by 15 per cent per annum for the six succeeding years.

Some of the paper mills in the paper group were Canada's strong competitors in the Australian market. Indeed, it is said they were instrumental in getting a reduction on the paper from British mills.

All the trouble has originated through Sir Percy Simmons, a member of the firm of solicitors acting for the intimation that the company had stopped payment and was unable to carry on.

unable to carry on.

The news of a receiver and manager having been appointed has caused no end of discussion in British paper and pulp circles; it is the only topic of discussion this week considering the large interests that are involved. Becker's and Marsden's have large contracts to fulfill and the Bank thinks there would be a great disturbance in trade unless a receiver and manager were appointed by Court of Chancery.

Selfishness is death. The self-centered has within himself the germ of decay.

No poverty is unendurable except poverty of soul.

Woodlands Section

EVERYDAY USES OF AIRPLANES

"One of the most important things to be determined by Canada today is the extent of her forest areas and the amount of standing timber on which so many of her industries are dependent. No sane forest policy can be framed until we know how much timber Canada possesses, and the use of aerial photography offers the most rapid and cheapest means of obtaining this information," declared Mr Ellwood Wilson, of the Laurentide Co., Limited, in an address at the Engineering Institute of Canada last evening on the use of the airplane in surveying and engineering.

Mr. Wilson said the origin of aerial work in this respect had been the use of captive balloons in 1915, but these had soon been discarded because found too expensive In the spring of 1919 his firm obtained two aeroplanes from the Air Board for experimental work, and started in with them on forest patrol and mapping work by aerial photography.

This has since been developed to a point where it is very useful in all sorts of engineering work, such as the laying out of railroads, highways, transmission lines, sites for power developments, storage reservoirs, town planning operations, and the laying out of new streets in subdivisions, said the speaker. Its value has been recognized to such an extent that it has been adopted by many important Canadian companies, such as the Laurentide Company, the Shawinigan Water & Power Company, the James McLaren Lumber Company, and the Wayagamack Pulp & Paper Company.

"By means of the aeroplane, surveying, forest patrol and mapping work can be done with much greater rapidity and economy than when done on the ground" Mr. Wilson stated. "As a comparison, it takes ten men one month to do fifty square miles when working on the ground, whereas the same amount can be done in one day's flying with far greater accuracy and at far less expense. The average timber cruise, covering about 2 1-2 per cent. of the area, costs about $65 a square mile, whereas the same work done by aerial photography covers 100 per cent of the area and costs about $55 a square mile."

Mr. Wilson told of an interesting incident in connection with aerial survey by a paper company. A line was seen on one of the photographs which could not be explained but which when examined on the ground was found to be a well-worn foot-path. As no one had any right in this area an investigation was instituted and the discovery was made that the path had been worn by employees who were stealing the company's material. As a result of the discovery the thieves were easily apprehended and the depredations stopped.

By-law Breakers

"Another interesting use of aerial photography is the adoption by many American cities of this means for bringing their city maps up to date." said the speaker. "Insurance companies have used these photographs to dectect forbidden accumulations of rubbish in back yards and on roofs of buildings."

Mr. Wilson said that the work done by the Canadian Air Board in mapping the inaccessible north country in Manitoba for the Genealogical Survey had saved large amounts of money and a great deal of time. A new method of making maps from oblique aerial photographs had been devised by Dr. Deville, Dominion director of surveys, which the speaker said would doubtless prove of great use and wide application.

A general discussion followed Mr. Wilson's address, in which J. T. Farmer, chairman of the Montreal Branch of the Engineering Institute of Canada; Professor A. J. Kelly, of McGill University, and J. L. Busfield, participated. A vote of thanks was moved by C. B. Thorne, of the Riordon Paper Company. J. Chalmers acted as chairman.

THE PULPWOOD COMMISSION

(Editorial, Gazette, Montreal)

The matters which the Pulpwood Commission is supposed to be investigating are of first-rate importance to the people of Canada. The Government, having obtained from Parliament authority to prohibit the export of pulpwood cut from freehold lands, announced its intention of inquiring into the whole question of the conservation, manufacture and marketing of pulpwood, the result of this inquiry to be the basis of future action. The pulpwood resources of Canada, and the industry dependent upon those resources, are of enormous value to the country, a value which has been materially enhanced by the rapid depletion of pulpwood forests in the United States. The resources and the industry mean much to the settler, the manufacturer and the investor, but they have also, or are believed to have, a political value of no small importance; in plain words, Canada holds the key to the pulp and paper situation in the eastern States as well as in this country, a key which may be of great service in safeguarding Canadian interests in the field of international commerce. The purpose of the Pulpwood Commission, as understood by the public, has been to obtain accurate and dependable data from responsible persons bearing upon the best methods of conserving and utilizing these pulpwood resources. The public are now, after some weeks of observation, in a position to form their own conclusion as to whether or not that purpose is being served.

The responsibility for the success or failure of the inquiry must rest upon the Government, which appointed the commission and defined its authority. The course which the commission has pursued up to the present has had, presumably, the sanction and approval of the Government; it cannot be said to have made a very favorable impression upon the public. It does not appear, for example, that the commission has taken or is taking adequate means of informing itself upon the real question before it, the conservation of Canadian resources for the benefit of Canada. The practice of hearing voluntary witnesses cannot be relied upon to serve this purpose; it is obviously open to abuse, affording, as it does, an opportunity for interested parties to put in evidence calculated to serve entirely different purpose, and to overload the record with evidence of that character. An inquiry that is open to all concerned is proper enough, but it looks very much as if, in the application of that principle, the Canadian case is being pushed into the background. The commission, we take it, should obtain the evidence of responsible Canadians who understand Canadian forestry conditions, the pulpwood industry, and the strategic position which that industry holds in relation to international commerce; otherwise the object of the investigation is likely to be defeated, and the report, when it is forthcoming, will be of little value.

It is fair to assume that the Government regards this inquiry seriously and intends it to be effective. To make it effective, however, some alteration, at least in the procedure, seems imperative. United States interests, which have protested vigorously against the proposed embargo, are represented before the commission by counsel who are, naturally, making the most of the American case. If these gentlemen have the right to be there and to cross-examine witnesses as they have been doing, it is reasonable to suggest that the Canadian Government should itself appoint counsel to assist the commission, and should clothe him with authority to direct the course of the inquiry upon the lines originally intended. Something, at any rate, ought to be done to restore public confidence in an investigation for which the public are paying, and upon which so important a question of public policy depends.

PULPWOOD CONTRACTS TO REPLENISH LOW STOCKS

The fall pulpwood statement compiled by the Woodlands Section of the American Paper and Pulp Association, shows that eight New England mills have under contract, as of September 1,339,000 cords of pulpwood, and 34 New York mills have 464,900 cords under contract. The 34 New York mills have in stock 505,700 cords of wood, while 30 New York mills a year ago reported stocks of 706,170 cords, and 345,000 cords under contract. The percentage of wood on hand and under contract is almost exactly the percentage to consumption shown in the same report in 1922. These figures would indicate that the reports of larger imports of Canadian pulpwood do not truly show any effort by American mills to stock up in anticipation of a pulpwood embargo. More mills reported their contracts this year than was the case a year ago, indicating a growing appreciation of this service by the Woodlands Section, which makes its three annual reports on September 1, December 1, and February 1 of each year. In the lake states, an entirely different situation is found, the percentage of wood in stock or under contract being smaller than in the east, possibly because the wood is in those states closer to the mill, and consumption does not need to be anticipated so long in advance.

Prices for the wood are higher than the figures reported a year ago. In New England, for instance, the price of rough wood averaged $14.80 and in New York the cost was $23.70 for rossed wood

TO DEMONSTRATE A SNOW MOTOR

The projected field demonstration in the snow covered forests of the north woods by the Woodlands Section of the American Paper and Pulp Association of a snow motor is resulting in many calls from northern pulp mills and motion picture houses catering to paper mill communities for the motion picture film showing the snow motor in action. The pictures were taken last year in the West, and are being shown so that practical woodsmen can devise in advance some difficult tests to put this machine to when the demonstration is held in mid-winter. The film is already scheduled for showings in Carthage, Au Sable Forks, N.Y., as well as Sheldon Springs, Vt., and Austin, Pa

PAPER MANUFACTURERS ORGANIZE TO PROTECT WISCONSIN FORESTS

Wausau, Wis., Oct. 23,—After an all-day conference, arranged by the American Paper and Pulp Association in co-operation with Wisconsin paper and pulp manufacturers, the Wisconsin forest Protective Association was organized to take aggressive steps toward the development of a positive forestry policy for the state of Wisconsin.

Fourteen paper and pulp mills were represented, and the conference was attended by State Tax Commissioner Llons, State Conservation Commissioner Hall, and State Forester Harrington, as well as by Dr. Hugh P. Baker, executive secretary of the American Paper and Pulp Association.

The officers elected were: President, D. C. Everest, Marathon Paper Mills Company, Rothschild, Wis.; Vice President, J. L. Delbridge, Falls Manufacturing Company, Oconto Falls, Wis.; Secretary-Treasurer, B. T. Mc Bain, Nekoosa-Edwards Paper Company, Port Edwards, Wis.

When the conference of the paper and pulp manufacturers with state officials was originally suggested there was no thought of the formation of a permanent organization. The presence of the state officials, however, developed such possibiliies for the establishment of a forward-looking, progressive forestry policy for the state that it was thought best to organize for aggressive action toward this end. The preservation of the forests to the end that there may be a continuous supply of the raw material necessary for the operation of the great group of Wisconsin paper mills will be the objective of the new organization. The program will include all phases of the forestry problem, such as adequate taxation legislation, fire prevention, reforestation, and the like, needed to make the paper industry a permanent industrial feature of Wisconsin's welfare

STREAM POLLUTION AND WASTE PROBLEMS

Problems of stream pollution and the wood waste problem on the Pacific Coast have been discussed at two informal conferences in the offices of the American Paper and Pulp Association.

William A. Gately of the Department of Commerce is working on the Pacific Coast question, and asked the assistance of the Association in securing information relative to the use of west coast woods for pulp. He has been on the coast for more than two months for Secretary Hoover, studying waste in the lumber industry, and has asked the help of the Woodlands Section and the Technical Association in further studies along this line, particularly with regard to the use of the wood waste from the lumber industry for paper making.

The discussion of stream pollution was with William Sparagen, secretary of the Division of Engineering of the National Research Council. Dr. Baker told Mr. Sparagen that the paper industry needs large quantities of good clean water and is in favor of proper methods for preventing stream pollution. Before legislatin is enacted, however, it was pointed out, there should be a scientific knowledge of what constitutes stream pollution, and how it may be properly prevented. With such information and not otherwise should it be possible to take legislative steps toward solution of the question.

In Ontario during the first six months of 1923, 19 small children lost their lives from burns and scalds Cause: Playing with matches, Falling into buckets of boiling water. Help prevent this in your home.

FIRST SULPHITE MILL IN NOVA SCOTIA

The Albany Perforated Wrapping Paper Company, the second largest concern of its kind in the United States, will erect a pulp mill at Sheet Harbor, where they have purchased the property of the Sheet Harbor Lumber Company, formerly Rhodes and Curry. The contract between that company and the Nova Scotia Power Commission for electrical power to the amount of 21,042,600 kilowat hours per year has been signed by Hon. E. H. Armstrong, Chairman of the Power Commission, according to an announcement by the Premier.

The mill, it is understood, will have a capacity for 25,000 cords of pulpwood per year, and the initial amount of money to be spent at Sheet Harbor will approximate $250,000. When completed and running the enterprise will employ about seventy-five men in the mill and 200 men in the woods. It will be the first sulphite mill in Nova Scotia.

The area of pulp and timber land owned by this company in the Sheet Harbor district amounts to about 60,000 acres. The product of the mill will be shipped directly from Sheet Harbor by boats, the company having their own shipping facilities.

This is one of the most promising industrial enterprises undertaken for Nova Scotia for some time. A factor in the matter was that the Government of Nova Scotia, through the Power Commission, was developing a large amount of power at Sheet Harbor, which they could afford to sell at a reasonably low rate to be attractive to industries. Another factor of this nature was the location of Sheet Harbor, affording excellent deep water shipping facilities.

These factors combined with the extensive acreage of the finest type of spruce and fir, practically unbroken forest, affording exactly the kind of wood which the company required for their paper, has brought about the decision of the company to erect a complete pulp unit at Sheet Harbor.

In the nature of conservation it is looked upon with much favor, as the establishment of such a mill as the Albany Company propose is making use of and manufacturing the product in Nova Scotia.

The contract provides on the part of the Power Commission the deliverance of 21,042,600 kilowatt hours per year. This energy is to be supplied to the company on a twenty-four basis throughout the year at the Company's premises on West River, Sheet Habor. The contract provides that the company shall pay a stated price per annum per kilovolt ampere of maximum demand, and to pay in any case a minimum annual amount, whether the same is taken or not, of $98,298.15. The contract will be for thirty years.

On the Company's part the contract provides for them to commence work on their plant at Sheet Harbor before the first day of May, 1924, and they shall erect a mill capable of utilizing the power which the Commission contracts to reserve and supply to them. This mill is to be completed within fifteen months. The mill they erect shall be capable of employing seventy-five men throughout the year, and also to prepare sufficient quantities of wood to ensure the employment of at least an average of 200 men in the woods.

The contract further provides for the contracts to be signed by January 1st, 1924, by the Company, for machinery and equipment costing not less than $100,000. Commencing on May 10, 1924, the Company will on the 10th of each month and every month up to the 10th of December, 1924, furnish the Commission with monthly progress estimates showing an average monthly expenditure of at last $25,000 in the construction and equipment of such pulp mill.

To insure performance of this contract on the part of the Company, the Company agrees to furnish the Commission with the bond of any Surety Company licensed to do business in the Dominion of Canada for the amount of $200,000.

The Manager's Statement

The representative of the Albany Company, who has been in Halifax for some time negotiating this contract and arranging for the erection of the plant at Sheet Harbor, is R. E. Jones, who will henceforth be the local manager and reside permanently at Sheet Harbor. Mr. Jones said that the prime object of the Company coming to Nova Scotia was to own their own pulp limits, from which they could derive their supply as they needed it, and more economically. The property which they have recently purchased has already upon it a saw-mill, from which the Company are now able to procure the lumber required for much of their construction work. Mr. Jones said that as soon as spring comes next year operations of erection will begin. They expect to employ about 75 men in the mill and 200 men in the woods.

Speaking of the limitations or extensions of their resources, Mr. Jones said that they could not cut their growth at the capacity measurement of the mill which they intended to erect at Sheet Harbor.

"We cut carefully and efficiently," said Mr. Jones, "and have experienced woodsmen in the forests, and we also take special precautions to protect our woods from fire." This was done, Mr. Jones described, by a system of telephones and chemical fire extinguishers placed in strategical sites throughout the forest preserves.

The Albany Perforated Wrapping Paper Company, founded in 1877, has its factories in Albany, N. Y. Their capacity is eight tons a day, the second largest enterprise of its nature in the United States, and their sales are made not only throughout that country, but to the whole world. They are financing their project themselves; there will be no flotation of stock.

RADIATION FROM SULPHITE DIGESTERS

According to the recent report of the committee on waste of T. A. P. P. I., the radiation from the digester shell has been estimated to be 3-4 to 1 B. t. u. per hour per degree difference in temperature per square foot of surface. It is now possible and practicable to cover digesters with insulating material in the form of asbestos mats, about 7 1-2 x 3 ft., that conform to the shape of the digesters. Each section is held by hooks at the butt straps of the digester and adjacent sections are laced together with copper wires. By the use of digester insulation it is possible to reclaim much of the radiant heat. A conservative estimate of these radiation losses from a 10-ton digester is 7,000 to 8,000 lb. of steam per day, which at an average cost is equivalent to from $4 to $5 per 24 hours.

A despatch from Halifax, relative to the proposed sulphite mill of the A. P. W. Paper Co. at Sheet Harbor, states that the mill will use 25,000 cords of wood per month. This would make it a producer of about 450 tons of pulp per day—some mill!

TECHNICAL SECTION

REVIEW OF RECENT LITERATURE

CELLULOSE

A-15 The Action of Concentrated Hydrochloric Acid on Different Celluloses. E. C. SHERRARD and A. W. FROEHLKE. **J. Amer. Chem. Soc.** 45, 1729-1734 (July 1923). The curves showing the specific rotation for cellulose from spruce, yellow birch, Douglas fir and cotton in solution in concentrated hydrochloric acid (41%) exhibit marked differences, indicating a difference in either the primary or the secondary reactions, which in turn would point to a difference in the celluloses themselves. A marked similarity was observed between the curves for cotton and white spruce celluloses, though cotton hydrolyzes only to glucose and white spruce yields a fairly large amount of manose. The curves for cellulose from Douglas fir and yellow birch are also similar in character, although the former contains 5.5% pentosan while the latter contains as high as 28%. The authors conclude that the optical method for determining the quantitative conversion of cellulose to sugar is of little value. It does indicate, however, that considerable differences exist between celluloses from different sources; otherwise all the curves would be identical in shape.-A.P.-C.

A-15 Contribution to the Chemistry of Wood Cellulose. II Nature of Wood Cellulose. LOUIS E. WISE. **Ind. Eng. Chem.** 15, 711-713 (July 1923). A brief recapitulation of the experimental work of a number of investigators, used to evolve a constructive working hypothesis on the nature of wood cellulose. The cellulose aggregate is composed of a relatively large number of small units held together by secondary valences. Absorption, swelling, mercerization, etc., are due to disturbances in the secondary valences, whereby the surface area is increased by partial separation of the units from one another. In hydrolysis, acetolysis, oxidation, etc., the primary valences are attacked and the unit itself broken down. There is at present little or no evidence that beta— or gamma-cellulose are actually components of the original material from which cellulose has been isolated, and they may actually be considered in part at least as derivatives of the original cellulose. The cotton cellulose aggregate consists entirely of cellulose units, while the wood cellulose aggregate consists largely of cellulose units with some non-cellulose units, probably units of carbohydrates absorbed on the cellulose during the growth of the cell. -A.P.-C.

A-15 The Preparation of Standard Cotton Cellulose and the Proposed Methods of Analysis. HAROLD HIBBERT et al. **Ind. Eng. Chem.** 15, 748-751 (July 1923). Report of the committee of the Cellulose Division of the American Chemical Society, describing in detail the procedure proposed for the preparation of a "standard cotton cellulose" for research purposes and the methods proposed for its analysis.-A.P.-C.

A-1 The Gelatinization of Lignocellulose. I. Preliminary Paper. A. W. SCHORGER, **Ind. eng. chem.** 15, 812-814 (Aug. 1923. Experiments described show that woods (particularly hardwoods) gelatinize with great ease when ground in a ball mill with alkalies, especially caustic soda and potash. Gelatinization seems to take place in two distinct stages, the wood first acquires a peculiar affinity for water by mechanical, and possibly chemicals action, and then combines with water to produce a gelatinous product. Gelatinization may be considered as resulting primarily from the hemicelluloses in the wood, with a secondary gelatinization of the cellulose proper. Bark and cereal straws gelatinize readily. The properties of the gelatinized wood are described. There is no simple physical or chemical method of determining the degree of gelatinization, except where the differences are very great.-A.P.-C.

A-1 Contributions to the Chemistry of Wood Cellulose. III. The Acetolysis Reaction Applied to Cellulose Isolated from Commercial Species of Wood. LOUIS. E. WISE and WALTER C. RUSSELL. **Ind. Eng. Chem.** 15, 815-818 (Aug. 1923). Alpha-cellulose prepared from Cross and Bevan cellulose from a number of commercial conifers and hardwoods yielded 24-33% of the theoretical amount of cellobiose octa-acetate "Fibersilk" from spruce gave 24% and carefully purified pine cellulose prepared by the sulphate process and normal cotton cellulose yields 33 and 34% respectively. As far as the cellobiose reaction is concerned, wood cellulose from different sources and that isolated from the same source by different methods behave similarly, and the cellobiose grouping in characteristic of all the celluloses studied. Procedure is described in detail. **Optical Properties of Cellobiose Octa-Acetate.** EDGAR T. WHERRY. **Ind. Eng. Chem.** 15, 818 (Aug. 1923). Samples of cellobiose octa-acetate from cotton cellulose and from wood cellulose, respectively showed identical optical properties.-A.P.-C.

RAW MATERIALS

A-1 Manufacture of Pulp and Paper from Australian Woods. L. R. BENJAMIN. Commonwealth of Australia, Inst. of **Sci** and **Ind.** Bull. No. 25, 1923, 92 pp. **J. Soc. Chem. Ind.** 42, 923A (1923); **Paper Makers' MO J.** 61, 334-5 (Aug. 15, 1923); **2World's Paper Tr. Rev.** 80, 526-530 (Aug. 17, 1923); **Paper Mill** 47, No. 36, 40, 42 (Sept. 8, 1923); **Paper Trade J.** 77, No. 11, 56 (Sept. 13, 1923). The desirability of establishing a pulp and paper industry in Australia has led to a further and more comprehensive study of many Australian woods hitherto regarded as unsuitable for papermaking. The soda process was used throughout and encouraging laboratory experiments were repeated on a semi-commercial scale. By using comparatively week liquors, e.g., 30% of caustic soda (on the dry weight of chips) at a concentration of approximately 44 g. per liter and moderate cooking pressures, e.g., 100 lb. per square inch, for about six hours, many varieties of immature eucalypts are capable of yielding 41 to 48% (bone dry pulp one bone dry wood of screened pulp requiring 10 to 16% of bleach. The digester used in the commercial trials was fitted with an external liquor heated and a circulating pump to avoid excessive dilution of the cooking liquor, which would result from the use of live steam for maintaining the cooking pressure. The Victorian eucalypts, "mountain ash" **(E. regnans)**' "wollybutt" **(E. delegatensis)**, and "silvertop" **(E. sieberiana)**, and the Tasmanian varieties, "swamp gum" **(E. regans)**, "gum-top" **(E. delegatensis)**, and "stringy bark" **(E. obliqua)** are the easiest woods to prepare and give a high yield (47 to 48%) of easy-bleaching pulp. "Karri" **(E. diversicolor)**, "marri" **(E. calophylla)** and "blackbutt" **(E. pilularis)** give rather low yields (46.9%, 43.5% and 43.2%, respectively) of pulp with a higher bleach consumption (14 to 16%, but, being denser woods, show higher yields when pounds of pulp per cord of wood is taken as the basis. All these woods give over 30% more pulp per cord than does poplar or spruce and they grow to a usable size in 8 to 15 years and can be cut and transported all the year round. Paper-making tests, using 750 lb. beater, show that the bleached pulp, though short-fibered, hydrates well, and if beaten carefully for about 4.5 hours, avoiding excessive cutting, and relying on a moderate brushing action, using dull knives, can be used in admixture with sulphite pulp in the production of high-grade printings, etc. Papers containing 60 to 65% of eucalypt pulp possess good opacity, should be capable of taking a high finish, and are as strong as or stronger than similar papers containing 90% of sulphite pulp. There is less shrinkage during the drying of papers containing much euclypt pulp than is experienced with sulphite stock beaten to the same degree of wetness and fineness. The total estimated cost of producing bleached soda pulp from immature "karri" is about $60 per ton for mill having on output of 10 tons per 24 hrs; with a higher output this figure could probably be reduced to $50 to $55. In view of this and the enormous quantities of wood available in the form of regrowth resulting from saw-milling operations, notably in Victoria and Tasmania, it should be possible to establish a pulp industry capable not only of supplying home requirements but also of building up an export trade. The suitability of immature eucalypts as a source of mechanical pulp has not as yet been fully investigated, but, with imported newsprint at $107 per ton, it appears probable that, under favorable conditions, if made on a large scale, newprint containing chemical pulp alone, including 20 to 30% of imported news-grade sulphite pulp, could be profitably made for home consumption.-C.J.W.

A-3 Chemical Constitution of Sugar Cane Bagasse and Rice Straw and their Decomposition (for Making Paper Pulp). H. KUMAGAWA nd K. SHIMOMURA. **A Angew. Chem.** 36, 414-418 (1923). General considerais given to the analysis of bagasse and rice straw and the results of using these materials for paper manufacture by established processes. Contrary to general opinion, the silica content of bagasse was found to be very small. By the sulphite process a light yellow pulp is obtained, but the sulphate process of Braun (Eng. p pat. 139,171) and the chlorine process of DeVains gave a good yield of easily bleached fiber. Rice straw, in spite of a much higher ash and silica content, was more easily decomposed than bagasse, but the yields were smaller. The high ash content of the resulting fiber did not affect adversely the quality of the paper.-C.J.W.

Pulp from Pine Leaves. T. HIROSAWA and T. KISHIHARA. Jap. pat. 41,587, Jan. 30, 1922. Pine leaves are immersed in 2/3% nitric acid overnight. After drying, they are crushed, sieved, boiled with 0.5 to 0.8 sodium carbonate or calcium hydroxide solution under a pressure of 3 to 40 lb., and then with 1% calcium bisulphite for 0.5 hours. They are bleached and made into pulp.-C.J.W.

A-3 Manufacture of Paper Pulp from Banana Trash. D. A. MacCALLUM. Eng. pat. 194,527, Feb. 27, 1922. Pulp suitable for paper making can be obtained from banana trash, i.ee., leaves and stems of banana trees, by the following process, in which no chemical reagents, apart from those used in the bleaching operation, are required. The raw material, after passing through crushing rolls to remove the juice, is disintegrated in a pulping machine and transferred, together with the juice expressed by the crushing rolls, to a digester where it is boiled with water for three to six hours at a pressure of four to five atmospheres. The fibrous residue is then placed in a beating engine and washed to effect removal of gummy and resinous material. The resulting cellulose is light in color and comparatively easy to bleach. If it is inconvenient to add the expressed juice to the digester, a longer cooking time should be allowed.-A.P.-C.

A-3 Paper from Reeds. J. MELROSE ARNOT. **World's Paper Trade Rev.** 80, 474, (Aug. 10, 1923). Brief discussion of the possibility of establishing a reed pulp industry in England, based on results obtained in Europe.-A.P.-C.

A-3 K-18 Manufacture of Straw Paper and more Particularly of Corrugated Straw Board. R. HEBERT. **Papier** 26, 825-837 (July 1923). General description of the manufacture of the pulp, its transformation into paper or board, and of the methods of corrugating the board.-A.P.-C.

A-3 E-0 H-0 Paper Pulp from Straw. B. S. SUMMERS. U.S. pat. 1,457,915, June 5, 1923. Vegetable straw is successively treated with sulphur dioxide or calcium bisulphite or other acid reducing agent and with an oxidizing alkaline bath which may be formed of sodium hydroxide and a hypochlorite.-A.P.-C.

A-3 Notes on Straw Pulp. A. LAMBRETTE. **Papeterie.** 45, 634-637 (July 10, 1923). In the treatment of cellulosic materials with caustic soda the author has noted that: (1) At equal temperatures disintegration is more rapid in the presence of air than under pressure; (2) It is very greatly accelerated when the material is stirred in such a manner as to bring it into contact with air; (3) In the latter case, the rate of disintegration is at a maximum at a temperature slightly below the boiling point; (4) These phenomena are to be attributed exclusively to the formation and solution of oxy-cellulose, so that the separation of the fibers is really due to a destruction of part of the fibers. Before judging definitely of the value of the Fournier process, it would be necesary to ascertain not only the yield and quality of the fibers, but also the cost of the finished paper, as the subsequent treatment of the pulp may be more expensive than the complete treatment of straw by the usual process.-A.P.-C.

A-3 Paper from Kapox Fiber. A. LENDLE, U.S. pat. 1,450,600, Apr. 3, 1923. Kapox fiber is used to form paper which is of a silky textile-like texture, adapted for covering boxes.-A.P.-C.

(Continued on page 1130)

PULP AND PAPER NEWS

Returning to Toronto last week from a visit to Simcoe County, George Carruthers, of the Interlake Tissue Mills, Limited, reported the gratifying movement of reforestation in progress in that Ontario district. With an ultimate aim of planting 100 acres in trees annually, 600,000 yearling seedlings are now being transferred from tree nurseries, while thirty acres of the Simcoe County area is being planted in three-year-old seedlings. Throughout Ontario, said Mr. Carruthers, farm houses stand in the open, unappealing, exposed to sun and wind, when a few of the trees sacrificed from the farmer's wood lot for Christmas festivity might be retained and replanted to beautify the farm house surroundings.

Harry L. James, of the Stevens Paper Mills, Inc., New York, manufacturers of pressed board, was a caller on the Toronto paper trade last week.

C. H. Featherstonhaugh, manager of J. C. Wilson & Co., Montreal, called on the Toronto jobbing trade last week.

The Toronto paper jobbing trade, as represented by E. H. Wilkinson, of the Wilkinson Paper Company, and W. M. Cameron, of the Cameron & Fraser Paper Company, met two millmen in the persons of H. A. Goldsbrough, of Wayagamack, and E. Hird, a former seller for paper mills, in mortal combat on the grounds of the Toronto Tennis Club a few days ago and now Messrs Wilkinson and Cameron have a verbal battle on as to which was responsible for their defeat by the opponent paper makers. It is satisfactory to note, however, that so far their arguments have not disrupted the good relations that exist in Toronto paper jobbing circles.

The Bloor Press, 748 Dovercourt Road, Toronto have a neatly printed motto which many in the paper and printing trades are trying to get hold of on account of the truth wrapped up in the words; "Any man who buys your work at near cost or less than cost is no customer. He is a menace to your business and to your future existence."

It is possible that I. H. Weldon may have forgotten it but the popular head of the Provincial Paper Mills, Limited, has a birthday coming this month. Who's Who tells us that Mr. Weldon was born at Woodstock, Ont., Nov. 17, 1875.

Lawson Paper Products, Limited, London, Ont., has been granted Ontario incorporation, with an authorized capital of $250,000. They are empowered by charter to manufacture and deal in paper of all kinds. London lawyers are mentioned as the incorporators.

When twelve cars of a freight train were ditched near Woodstock, Ont., a few days ago, a considerable quantity of newsprint and printing machinery was smashed up or badly damaged. Rolls of paper and one printing press were thrown over into an adjoining plowed field.

Eighteen square miles of timber area in Bond township, located in the vicinity of the T. & N. O. and Transcontinental have been disposed of by the Department of Lands and Forests, Toronto, to the Hawk Lumber Company, of Monteith. The successful bidder tendered as follows; pine, $1.20 plus $2.50 dues; spruce and poplar, $2.76, plus $2.00 dues; tamarack, etc., 76c., plus $1.50 ties, 21c., plus 10c.; spruce pulpwood, 90c., plus 40c.; fuel, 6c., plus 25c. The Department considers the prices satisfactory.

Friends of William J. Southam, Vice-President of the Spectator Printing Company, Hamilton, will be pleased to learn that he has almost completely recovered from his recent accident. Mr. Southam was thrown from his mount when it did not clear the third obstacle in a point-to-point steeplechase at the annual Gymkhana of the Hamilton Riding and Cross-country Club, and in the fall was rendered unconscious for a time.

Ground was broken at 90 Jarvis Street, Toronto, last week, for the erection of the new home for the George Shepard Printing Company, Limited, now located at 42 Colborne Street, which for the past 42 years has been one of the city's leading printing houses. The ceremony was performed by Mrs. George Shepard, assisted by her daughter-in-law, Mrs. Verva Shepard, wife of B. P. Shepard, office manager of the firm. George W. Shepard, sales manager; M. W. Shepard, superintendent, and other members of the staff were present to start the new project off with success. The building will be constructed with Cooksville Shale brick, will be heated by a modern oil-burning system and protected from fire by a sprinkler system.

Edward Short, aged 16, employed by the Telfer Paper Box Company, 14 Duncan Street, Toronto, is in the Western Hospital in that city and is in a critical condition as the result of falling down an elevator shaft at his place of employment. Short reached into the shaft to operate the elevator when he became overbalanced, falling headlong to the pit thirty feet below. In attempting to save himself he grabbed a hand truck which he pulled in on top of him.

The manufacture of an entirely new Canadian product, carbon black, will shortly be started by the Sarnia Oil and Gas Company, Limited, who are building plants at Blackwell, near Sarnia, and at Medicine Hat, Alberta. The product is used in the manufacture of printing inks carbon paper, typewriter ribbons, stove polish and other commodities. At present 98 per cent of the carbon black produced comes from the Munro fields in Louisiana, where 800,000,000 cu. ft. of gas is burned daily There are many gas areas in Canada and the Mines Branch of the Department of Mines is now engaged in investigating them as to their suitability for carbon black manufacture.

W. J. Travis has joined the staff of the Collins Art Press, Bond Street, Toronto, and the firm will now be known as Travis & Collins. Mr. Travis was formerly with the Espie Printing Company, Toronto.

The Barber Division at Georgetown, Ont., of the Provincial Paper Mills, Limited. has resumed the manufacture of enamel blotting paper, which the leading jobbers are now handling. The experience of the company is that the Canadian made blotting paper has not reached that stage of perfection that will enable its use for satisfactory enamel work and as a result the blotting is imported from Virginia and finished at the Georgetown plant. It is being made in white and colors and is proving a very popular line with jobbers and printers.

I. H. Weldon, President, and S. F. Duncan, Secretary-treasurer of the Provincial Paper Mills, Limited, have returned to Toronto after a successful hunting trip in the French River districts where they secured their quota of game. John Martin, of the John Martin Paper Co., Ltd., Winnipeg, was also with the party, and it is told of him that after a little rifle practise at the broad surface of a wooden box he was the first of the bunch to land his deer.

The Port Arthur Division of the Provincial Paper Mills, Limited is running at capacity and has a nice volume of orders ahead for their special grades of paper now on the machines. At the general offices of the company in Toronto it was learned that the concern is well booked ahead and that the outlook for business this winter is good.

S. F. Duncan, of the Provincial Paper Mills, Limited, spent several days last week on a visit of inspection to the Montrose Division of the company at Thorold. Ont.

The Thompson-Heyland Lumber Company, Toronto have made contracts for 67,000 cords of pulpwood to be delivered within the next six months. As soon as the snow falls in the north in sufficient quantities to enable settlers to haul wood to the stations for transportation on cars, the company will begin shipping and expect to send forward 600 cords a day, about a quarter of which is for pulp and paper concerns in the United States.

George B. Nicholson, ex-M.P., Algoma, and head of Austin & Nicholson, Chapleau, Ont., large lumber and pulpwood dealers, was in Toronto last week in search of men for the camps of the company. He reports a shortage of labor in the district north of Georgian Bay, and states that as high as $50 a month and board is being paid for bushmen. If these men care to work piece work they can earn as high as $100 a month and board He reports that from five to eight thousand men are required to man the lumber and pulpwood camps along the Canadian National and C. P. R. lines north of Georgian Bay. Mr. Nicholson's company took out 10,000 cords of pulpwood last year and will this season take out fifteen thousand cords for the Spanish River Pulp and Paper Mills, Limited, at Sault Ste. Marie. When asked his opinion re the proposed embargo on Canadian pulpwood Mr. Nicholson said that speaking from his own personal standpoint he was not in favor of such a move but as a Canadian citizen he thought that restrictions were advisable in the matter of exports, and from a patriotic, national standpoint he placed Canadian citizenship before immediate personal interests.

John F. Ellis, head of the Barber, Ellis Company, Limited, envelope and stationery manufacturers, Toronto, received the congratulations of hosts of friends on Nov. 9th., which was his birthday. At 78 years of age Mr. Ellis is one of the most active business men in Toronto, and still enjoys best of health and vigor. He is held in the highest esteem by members of the Canadian Paper Trade Association of which he is the Honorary President, and by such organizations as the Toronto Board of Trade, the Canadian Manufacturers' Association and kindred organizations, of which he is an active member.

Last week the Ontario Government disposed of two burned-over areas, one situated in the township of Rennie and 36 square miles in extent, and the other situated in the township of Shedden, and one quarter of a square mile in extent. The Rennie limit was awarded to Messrs. Austin and Nicholson of Chapleau, Ont., who pay $1 a cord for spruce pulp and 70 cents for other pulp. The Shedden limits was secured by Messrs. Graham & Wilkinson, of Spanish Station, who will pay $1.05 per cord for spruce pulp, inclusive of Crown dues.

The Wrightcroft Review, the house organ published in the interest of better printing by Croft & Wright, printers, 415,-419 King Street west, Toronto, has appeared in autumn garb. It is a bright publication, put out quarterly, and the latest number is an excellent example of the printer's art.

GUY TOMBS APPOINTED

Guy Tombs, head of Guy Tombs, Limited, of Montreal, has been appointed president of Pickfords Colonial, Inc., the American branch of this large British warehousing and shipping group being in New York. Simultaneously with this appointment it is announced that Pickfords Colonial, Inc., has become associated with Guy Tombs, Limited, of Montreal, the latter being a transportation firm, which specializes in the handling of pulp and paper. Pickfords Colonial, Inc., is opening an office at 285 Beaver Hall Hill, and Guy Tombs, Limited, will be represented in New York at 11 Broadway.

This expansion was decided upon after a careful survey of trade conditions by several of the London directors and officials, who have been spending some time on this side. E. F. Farrow, manager of Hay's Wharf; S. H. James, passenger manager, Pickfords, Limited, and G. L. Ranken, manager, Pickfords and Hay's Wharf Shipping and Forwarding Company, being still in New York.

Pickfords Colonial, Inc., is a subsidiary of the Proprietors of Hay's Wharf, Limited, London, England.

This vast corporation has owned and operated docks, warehouses, lighters and trucks, on the Thames on either side of London Bridge, for the greater part of a century, and its principal subsidiaries include: Arthur J. Humphrey and Henry Grey, Jun., Ltd; Pickfords, Limited; The Continental Express, Limited (London-Central Europe), Pickfords and Hay's Wharf Shipping and Forwarding Co., Ltd., Pickfords Colonial, Ltd., (Capetown), Pickfords Colonial Inc. (New York and Montreal); Societé Anonyme Pickfords, Ltd. (Paris).

First Freight Station

Pickfords have been engaged for 300 years in the transport of goods and passengers, and their long experience is probably unequalled.

The first freight station in the world (Camden Station) was devised and built by Pickfords, subsequently being sold by them to the London and Birmingham Railway, afterwards the London and Northwestern Railway, and now the London Midland and Scottish Railway. In addition to numerous London depots, they have over one hundred offices in England and on the Continent of Europe.

Their arrangement with Pickfords will enable Guy Tombs, Ltd., to be of further assistance to persons intending to visit the British Empire Exhibition.

WHAT'S THE USE?

If you save money, you're a grouch, if you spend it you're a loafer, if you get it you're a grafter, if you don't get it you're a bum. So What The H... Is The Use?

A-2 The Chemical Properties of Cotton Linters WILLIAM F. HENDERSON. **Ind. Eng. Chem.** 15, 819-822 (Aug. 1922). Physically linters differ from long-fiber cotton only in length. Treating linters with strong acids at low concentrations increases copper numbers considerably, and at high concentrations increases it very rapidly. Weak acids change the copper numbers but slightly. Alkaline treatment does not affect the copper number. Various methods for preparing viscose were tried. Preliminary acid treatment produced a much more pronounced effect on the viscosity of the viscose solutions than on the copper numbers.-A.P.-C.

A-3 E-5 Pulp from Straw and Similar Material. C. BACHE-WIIG. U.S. pat. 1,455,471, May 15, 1923. Straw, corn stalks, or similar material is treated with sodium chloride to soften it without destroying the ligneous matter and is then cooked with a bisulphite liquor to obtain pulp.-A.P.-C.

A-3 Seed Flax Straw as Paper Making Material. EDWARD H. KELLOG, MERLE B. SHAW and GEORGE W. BICKING. **Paper Trade J.** 77, No. 5, 43-49 (Aug. 2, 1923). Laboratory and commercial experiments carried out by the sulphate process are described in detail, which led to the following conclusions. Fair quality of wrapping paper can be made from whole seed flax straw, and good quality wrapping from seed flax tow, provided special care is taken to eliminate specks. Pulp from the tow can be readily bleached. The chemical consumption using whole straw is about double that for wood. A modified sulphate process using equal parts of caustic soda and sodium sulphide did not give satisfactory results. At present it is not economically fessible to use seed flax fiber for making paper of any description using the sulphate cooking process. A bibliography is given.-A.P.-C.

A-3 Paper Making Tests with Rice Straw. VIDAL and ARIBERT. **Paper Trade J.** 77, No. 3, 49-50 (July 19, 1923). See **Pulp & Paper** 21, 800 (Aug. 9, 1923); Paper Trade J. 77, No. 9, (Aug. 30, 1923).-A.P.-C.

A-3 Paper Making Tests with Bamboo. VIDAL and ARIBERT. **Paper Ind.** 5, 619-622 (July 1923). See **Pulp & Paper** 21, 800 (Aug. 9, 1923); **Paper Trade J.** 77, No. 9, 51 (Aug. 30, 1923).-A.P.-C.

PULP AND PAPER ANALYSIS AND TESTING

A-14 The Quantitative Estimation of Hemp and Wood Fibers in Paper Pulp. W. DICKSON. **Analyst** 48, 372-378 (Aug. 1923). The author determines the proportion of the two kinds of fibers by Spence and Krauss's method (**World's Paper Trade Rev.** Dec. 18, 1917), making no correction for differences in weight of the different fibers. Ordinary and polarized lights are used to identify the fibers. Magnification of 100 and 400 diameters are most useful. Microphotographs by ordinary and polarized lights are shown. Procedure is described in detail.-A.P.-C.

A-14 Testing Machine for Jacquard Stock. **Paper Trade J.** 77. No. 4 55 (July 26, 1923). The United States Testing Co., Inc., has developed a test to determine the punching resistance of cardboard stock for Jacquard cards, in pounds per square inch. This instrument is rated on a quarter inch plunger and may be attached to the Mullen-Gage tester or any similar machine operated by hydraulic pressure. The results obtained from a punch resistance test aid in determining the pressure necessary to operate a punching machine when perforating Jacquard cards and may be similarly used for leather or any material punched with a die.-A.P.-C.

A-14 Analysis of Paper. ANDRE BELTZER. **Industrie Chimique** 10, 298-301, 347-348 (July, Aug. 1923). Brief outline of microscopical analysis, characteristic fiber reactions, determination of loading, nature and degree of sizing durability, free acid and chlorine, absorbency, filtering power, transparency, and permeability to air.-A.P.-C.

MECHANICAL PROCESS

D-4 McMillan Defiberization Process for Wood. G. AICHER and U.S. McMILLAN. U.S. pat. **Paper Trade J.** 77, No. 7, 43-45 (Aug. 16, 1923). Slabs of wood are slide flat in an open-bottomed hopper which is mounted for longitudinal reciprocating movement over rapidly rotating defiberizing elements. Each of the latter consists of a spool formed of a tranverse shaft with a collar at each end, united to one another by a series of circumferentially disposed tie rods. On each tie rod is mounted in longitudinal aligment for free swinging movement a series of radically disposed combing teeth.-A.P.-C.

D-4 Manufacturing Facts on Pulp Sones. **Pulp & Paper** 21, 870 (Aug. 30, 1923). Brief outline of the manufacture of pulp stones.-A.P.-C.

D-0 K-15 Pitch Troubles in Newsprint Paper Mills. FREDERICK BARNES. **Chem. Met Eng.** 28, 505-508 (March 14, 1923). Groundwood pulp is probably never the starting point of pitch troubles. Spruce wood and not balsam or jackpine is probably the first cause of pitch trouble. Experiments carried out by the author show that if pitchy pulp be raised to temperature above 150° C., in the digester, pitch troubles on the machine are almost eliminated. The following suggestions are made to reduce or eliminate these troubles (1) Throw aside all logs showing evidence of wind cracks and showing resinous matter; (2) Bring the temperature of the cook before blowing to at least 150° C., and preferably to 155° for, say, half an hour to an hour; (3) Keep the sock, whether groundwood, sulphite, or machine stock, free from dirt, including such things as undissolved dyestuffs; (4) Keep groundwood pulp as 'free'' as is possible in good practice; (5) Keep the temperature of the dilute stock running on the paper machine as low as practicable; (6) Season all wood as far as practicable.-A.P.-C.

D-4 Automatic Regulation of Pulp Grinders. A. SYLVESTRE. **Paper** 31, No. 12, 28 (Jan. 10, 1923). See **Pulp & Paper** 21, 558 (May 31, 1923); **Paper Trade J.** 77, No.' 3, 52 (July 19, 1923).-A.P.-C.

D-4 New Mandrel for Magazine Grinders. WALTER L. GLASS. **Paper** 32, No. 20, 12-13 (Sept. 5, 1923); **Paper Trade J.** 77, No. 16, 108 (Oct. 18, 1923). The The mandrel is made from oak, or other hardwood, into a core whose outside diameter is just a fraction under the size of the burr, and inside diameter two inches. A small notch is cut into the side of the bore and an iron wedge 1.5 x 0.125 in. and the same length as the burr, is driven in. A pin the size of the burr holder pin is clamped in the center of the bore, and babbitt is poured around the pin. After cooling the burr is soaked in water to expand and tighten the wooden core. The merits of this mandrel are enumerated.-A.P.-C.

UNITED STATES NOTES

Secretary of Agriculture Henry C. Wallace, in a statement given out at Washington last week, declares that the development of an important pulp and paper industry in southeastern Alaska is inevitable because of the water power, timber and transportation conditions there. "The rate of development of the pulp and paper industry of the territory," says Mr. Wallace, "will be controlled by the economic factor of distance from present consumption centers, and by the necessity, inherent in the industry itself, for large capital investments, rather than by physical disadvantages. The physical conditions in southeastern Alaska—presence of cheaply developed power, an enormous supply of inexpensive wood and the availability of water transportation—are the very factors which make inevitable the expansion of pulp and paper manufacturing in the territory."

Harold B. Wadsworth, long known to the trade as an exporter and importer whose specialty was Japanese paper, pulp and allied products, died November 3rd at the Willard Parker Hospital, New York City. Mr. Wadsworth was in Japan at the time of the recent earthquake and the illness which brought on his death was caused by the condition of the food and water in that country following the disaster. He went to Japan early in the summer to superintend the construction of several paper mills there. Until six years ago Mr. Wadsworth acted as consulting engineer on paper mills for many foreign countries

According to a letter from T. Seki, secretary of the Association of Japanese Paper Mills, which reached New York last week, the paper industry in Japan, most of which centers around Tokio, was not a heavy sufferer from the September earthquake. The shocks shook the paper mills severely, but none of the plants were wrecked, a check-up revealed. Every factory is now operating to capacity as formerly. "The Tokio offices of a few paper companies were burned down, but so far as the manufacturing capacity is concerned, the paper industry is very much better off than many other lines of industry," Mr. Seki wrote.

Manufacturers of bleaching powder and liquid chlorine, two of the chemicals extensively used in the paper industry and in textile mills as bleaching and purifying agents, are waging a fierce price war. Prices have been repeatedly cut as one maker would undersell another in an effort to secure particularly attractive business ,so that new prices applying on 1924 contracts are much under the actual cost of production. How far this competition will extend remains to be seen. It has gone far enough to show consumers that they will lose nothing by waiting, and consequently they are buying nothing at all except what their current operations imperatively necessitate

One of the so-called infant industries rapidly approaching the adult stage is that of the greeting card manufacturers, according to the secretary of an association devoted to their interests. A business of more than fifty millions was done the past year, he says, and indications are that the demand for greeting cards for every occasion is steadily growing. In addition to the usual holiday cards there are now cards for birth announcements, birth congratulations, wedding felicitations, Father's and Mother's Day, condolence, graduation, etc. The public is demanding a better quality of card than formerly, more clever sentiments, better die work and better stock. While Fall lines are shown in February, it is not until May or June that orders are placed in quantity, and even then buyers are inclined to underbuy. As a result there is always a rush of repeat orders early in the Fall, continuing up to December. Manufacturers are often unable to provide the popular styles in quantities demanded. With less haphazard buying, according to the association, the public would get better cards at a better price.

Voters of New York State have turned down the proposed amendment to the State constitution whereby power interests would have been permitted to flood certain sections of the State Forest Preserve in the Adriondacks, and by a lease arrangement derive the use of hydro-electric developments projected on the lands thus leased. The majority against the proposition will probably exceed 250,000. Latest returns fail to show that the project has carried a single county. The vote in New York City, where much publicity was given in opposition to the plan was less decisive than in the State at large. In some cities it ran as high as four to one against the proposition.

More than 8,000,000 trees were planted in various counties of New York State in the past year, the Conservation Commission announced last Friday. Essex County leads with 1,695,000 and Levis County comes second with 775,500. This county also added more acres of new forests than any other county. The State's tree nurseries at Saratoga Springs and elsewhere have been enlarged and now produce 10,000,000 trees a year.

As a result of investigation, the Department of Agriculture has decided that most mysterious forest fires which have been attributed to firebugs were really caused by dust explosions. It is also believed that these dust explosions cause fires in a great variety of industries.

Following a re-organization, the Henniker Fibre Company, manufacturers of leather and fibre boards at Henniker, N. H., will be known as F. E. Norton & Sons Company. The concern has been taken over by F. E. Norton of Chambly Canton, Quebec, who is associated with Bennett, Ltd., manufacturers of heeling, counter and binder boards. He brings to Henniker considerable experience along leatherboard lines.

B. F. Perkins & Son, machinists and makers of paper mill machinery at Holyoke, have announced that its entire plant will be removed to Williamsett where a new building is to be erected at a cost of $100,000.

President George W. Ward, of the D. L. Ward Company, Philadelphia, has returned to his activities following an absence of several weeks which had been made necessary because of an operation for an affection of the throat and nose. Mr. Ward convalesced for a time at Atlantic City. He was much disappointed when his ailment prevented his attendance at the recent Chicago conference.

R. H. Beaumont Company of Philadelphia, Manufacturers of complete coal and ash handling equipment. and originators of the skip hoist for ash handling have appointed as their Canadian Representatives, the Combustion Engineering Corporation Limited, Head Office Bank of Hamilton Building, Toronto.

The Markets

CANADIAN TRADE CONDITIONS

November has so far shown a more encouraging tone in pulp and paper circles although there is not the pep to business in this or in any other line of industry that the season warrants. There are signs, however, of a gradually improved condition in the paper and paper products market and not a few of the jobbers and the manufacturers report a slightly increased volume of trade since the month opened Improvement has marked business conditions in several lines while others have not yet emerged from the dull period that has prevailed in the pulp and paper trade for some weeks. Publishers are using large quantities of both book and news paper and it is stated that many book publishers are just now beginning to reap the benefits of protection conferred on the book publishing industry through the Copyright Act amendments effected by the Dominion Government some time ago. Favorable reaction on the printing industry and on paper consumption has resulted and the general publishing trade may be said to be quite busy. One mill making special newsprint and book paper reports that they have been running to capacity for some time and that they have orders on hand for well over Christmas. Catalogue houses are using a fair amount of paper although the printing industry as a whole has not yet resumed its normal stride. Bond and writing paper mills have not yet experienced a revival of business and some of them are running light, while jobbers handling these lines report orders as of small dimension. In no line of paper, aside from news and book has there been a departure as yet from the small order era that has prevailed pretty much during the summer. This is partly ascribed to quiet business conditions generally throughout Ontario, due, to some extent, to the mild weather that has retarded the pre-Christmas trade in nearly all lines of merchandise. From now on, however, it is generally anticipated that business will improve. Manufacturers and wrapping paper jobbers need the improvement in the retail trade and it has come to them to some extent. Jobbers handling wrapping and paper bags report distinctly freer sales since the beginning of the month and expect that the trade will be back to normal as November progresses. Envelope manufacturers and manufacturing stationers are not doing the brisk business usual at this time of year, although there is a fair volume of trade in blank books and small stationery lines. Tissues, toilets and light weight paper specialty lines are enjoying a fair sale, and production of these papers is keeping up well, with the mills fairly busy. In no department of the paper trade, however, aside from the needs of the publishers, is there any great volume of business ahead. Neither jobbers nor consumers are inclined to speculate on stocks of any size and in most cases paper requisitions are for immediate requirements. Prices in all departments of the paper arena have undergone no disturbance or alteration for some time and no changes are looked for in the immediate future.

PULP.—A canvass of the pulp situation reveals the fact that most lines are showing a softening tendency. Groundwood pulp, for instance, is coming down a little and sales are now being made at $46.00. While there has not been sufficient water to affect the supply as yet it is believed that the lower prices are in anticipation of better water conditions, although the fact that the American mills are running light may be a greater factor in the situation as regards groundwood pulp than the water supply. The pulp market, as a rule, is not set by Canadian consumption, which is a comparatively small percentage of the total purchases, but by the requisitions of the United States mills. The price tendency for chemical pulps is also downward. While the prevailing quotations are $90 for bleached sulphite, $70 for unbleached and $65 for news grade, these prices are being shaved somewhat in the case of large-sized orders which are not very numerous. Neither selling nor consuming pulp mills are carrying any large stocks except in the case of big corporations that have big financial resources and generally speaking there is no speculative buying of raw materials.

NEW YORK MARKETS

New York, November 10.—(Special Correspondence) —Pronounced firmness is apparent in some branches of the paper market; in others there is, if anything, an easy undertone to prices while activity is on a scale which is far from satisfactory to manufacturers and jobbers. Taking the market in its entirety, present business in paper of all kinds is doubtless running beyond normal, but it is a fact that certain descriptions of paper are moving in exceptionally large volume whereas others are in subnormal demand, thus making for somewhat of an uneven state of affairs.

There is no complaint to be made regarding the newsprint situation. The only criticism of the market manufacturers make is that they are unable to fill the wants of all the publishers seeking print paper. Consumption keeps up on a record-breaking level.

The box board market has developed increased weakness this week. Demand has further subsided and prices have moved lower, mills situated in the East now quoting plain news and chip board at $55 a ton f.o.b. New York, with most of them freely accepting orders at down to $50 per ton. The situation in board is difficult to explain. Ordinarily at about this time board mills are experiencing the busiest period of the year working on pre-holiday business. Thus far it would seem this usual pre-holiday activity has not developed this season, and instead of being actively engaged board producers are anxiously looking for orders and are competing with one another in such a manner as to make for much easiness in prices. Prices today are fully $10 per ton under those prevailing prior to the recent strike of paper box factory workers in New York City, and present prospects are that there is small hope of improvement during the balance of the year for the reason that it is now so late in the year that if Christmas business has not yet developed it is not likely to.

The situation in book paper is not all that manufacturers could wish for either. Most book paper mills are fairly busy but they could easily accommodate more business, and competition in this branch of the trade is exceedingly keen so that prices are made to suffer to some extent. The ruling quotation on machine finished book is 6.50 cents a pound f.o.b. New York, and while some manufacturers are getting above the price for better quality paper, others are marketing their product at cheaper figures. The market condition is that not enough demand prevails to give all the book mills sufficient business to warrant full operation, and it is but natural that under the circumstances the price tone is none to steady. However, there are pleasing indications of further improvement in book papers. Publishers are using more and more paper and as the consumption mounts, orders to mills gradually increase in volume. Coated book papers are quoted at from 8 cents a pound New York upwards, depending on grade and tonnage.

Reports tell of a continued brisk demand for bag papers. An official of one of the two largest bag paper and paper bag manufacturing concerns in the country stated this week that the plants of his company were very busy, and that demand was showing a steady expansion. The recent sharp advances in cotton should help keep demand for bag papers active since activity in paper bags is due largely to the high prices of cloth sacks.

Wrapping paper is moderately active but there is no outstanding feature in this branch of the market excepting that converters are absorbing most of the domestic output of kraft paper. Merchants and other consumers using wrapping paper for wrapping purposes are mostly buying foreign paper, since in the majority of cases at least, the imported product is available at slightly cheaper prices than domestic wrapping. There is scarcely a paper concern in New York for instance which is not importing kraft wrapping paper from Sweden or Germany, and the amounts being brought into the country from these sources are tremendous compared with normal.

Tissues are moving along in a routine manner and at maintained prices, the demand showing a little increase just at present owing to the pre-holiday trade. Fine papers are provided with a moderately broad market and are holding steady in price although easiness in raw material has some softening influence.

GROUND WOOD.—Conflicting reports regarding ground wood prices have been obtained in New York this week. Reports emanating from Canada have said that producers across the border were easily securing $55 a ton and even higher for ground wood for prompt shipment, whereas dealers in this city who are selling agents for certain of the Canadian mills have told of making sales down to $40 per ton f.o.b. grinding plants, and at less in exceptional cases. Judging from this, quotations must be on a wide range, and it is likely that freight rates between producing and consuming points have more to do with fixing prices at present than usually, sellers probably gauging quotations on a delivered basis according to the freight so as to compete with one another.

Domestic ground wood is firm at around $41 to $42 a ton f.o.b. grinding mills, and reports state that not much supply is offered, most grinders being sold well ahead or else being such larger users themselves at present they have little surplus pulp to dispose of. Demand is good and is coming from a variety of sources, newsprint mills in particular.

CHEMICAL PULP.—While no firming of quoted prices is to be observed, it is evident that the undertone in the chemical pulp market is somewhat steadier. With the winter drawing near and with advices from Sweden telling of an early winter in Northern Europe, importers seem less anxious about disposing of any unsold pulp they have on hand while paper and board manufacturers appear to be inquiring more freely regarding available supplies. The feeling exists among importers that the flurry of demand from paper mills that is expected prior to the closing of the Baltic for the winter will develop almost any day now, and it is argued that any expansion of demand will result in an immediate strengthening of prices.

Most of the sales reported have been at low prices. The trade in New York is talking of a sale, said to involve 7,000 tons, of foreign kraft pulp to a board mill in the Middle West at the surprisingly low price of 2.57½ cents per pound ex dock New York. Foreign bleached sulphite has sold down to 3.85 cents on the dock at this port for No. 1 pulp, while imported unbleached of strong quality has been bought by paper mills at 2.90 to 3 cents ex dock. Domestic pulps also have sold at rather sharp price concessions, reflecting the desire of producers for business.

RAGS.—Prices of nearly all kinds of papermaking rags with the exception of some grades of new cuttings have slid off this week in a market characterized by little important buying on the part of consumers. Paper mills are in anything but a purchasing mood when it comes to rag stock. Orders are being placed, of course, but chiefly for small lots against immediate requirements, and the aggregate movement does not commence to approximate that usually noted at about this period of the year.

Roofing rags have eased off to around 1.45 cents a pound for No. 1 stock and 1.25 cents for No. 2 packing f.o.b. New York, while foreign dark cottons have sold to roofing paper mills at 1.35 cents ex dock New York. Repacked thirds and blues are available at less than 3 cents at shipping points, and miscellaneous packing at 2.40 to 2.50 cents. Old whites are slightly down in price, No. 1 repacked being quoted at about 6.75 to 7 cents and No. 1 miscellaneous at 6.25 cents a pound New York. New white shirt cuttings are steady and so are washables, unbleached muslins, blue overall cuttings and light silesias, but other descriptions of cuttings have sagged a little in value.

PAPER STOCK.—Waste paper prices have continued to decline in a way which would lead one to believe there is no bottom to the market. In fact, values have worked down to levels where packers claim there is no possibility of them realizing a profit in handling stock and it is asserted collections are either being stopped entirely or greatly curtailed. Old folded newspapers have moved down to 90 cents a hundred pounds f.o.b. New York, and it is quite likely some purchases have been made under this figure. No. 1 mixed paper is offered freely by New York dealers at 60 cents a hundred pounds, and orders at less have been accepted. Shavings are down to 3.75 cents a pound New York for No. 1 hard white and 3 cents for No. 1 soft white shavings, while heavy magazines are available to consuming mills at 1.60 cents a pound f.o.b. New York and perhaps at lower rates. Print manilas are quoted at 1.15 cents per pound New York, container manilas at 85 cents a hundred pounds, overissue newspapers at 1.15 cents, and old No. 1 kraft at 2.15 cents.

OLD ROPE AND BAGGING.—Additional advancements in old rope prices have been recorded in the New York market, and this article is in about the strongest position of any kind of papermaking material. Sales of domestic manila rope of No. 1 quality have been reported at 7 cents a pound f.o.b. this city, while foreign manila rope has been reported sold at 6.25 cents ex dock New York. The demand is keen and dealers assert that they have small stocks and are not receiving usual amounts from collection sources. Old bagging continues quiet and is quoted at about 1.25 cents a pound f.o.b. New York for No. 1 scrap burlap, and at 90 cents a hundred pounds for roofing bagging.

Industrial Items

BABCOCK-WILCOX AND GOLDIE- McCULLOCH LIMITED UNITE

The important announcement, has been made that Babcock and Wilcox, Limited of London, England and the Goldie and McCulloch Company Limited of Galt and the Babcock and Wilcox Company of New York have organized a new Canadian company under the name of Babcock-Wilcox and Goldie McCulloch Limited with head ofice and works at Galt. The capitalization of the new company is three million dollars and it will have branch offices in Vancouver, Winnipeg, Toronto, Montreal and the eastern provinces.

R. O. McCulloch is the president of the new company, A. G. Pratt of New York, is chairman of the board of directors, A. R. Goldie is vice president, and Alex. C. Fleming, secretary. The other directors are Sir James Kemnal, managing director of Babcock and Wilcox, Ltd., London, England ;W. D. Hoxie, president of Babcock and Wilcox Company of New York. E. H. Wells chairman of the board of the Babcock and Wilcox company of New York, and A. W. Atwater, K.C., of Montreal.

The new company has acquired the Canadian business of Babcock and Wilcox, Limited and of the Goldie and McCullock Co. Ltd., except the vault, safe and safety deposit manufacturing business of the latter company. The new company will continue the manufacture of high grade boilers, super heaters economizers, stokers and boiler accessories and engines, pumps, turbines, condensers, etc. at their works in Galt. The Goldie and McCulloch Co. Ltd. will continue to manufacture and deal in vaults, safes and safety deposit boxes at the city of Galt.

The Babcock-Wilcox concerns are the largest manufacturers of steam boilers and land marine superheaters in the world besides being important producers of chain grate stokers, steel economizers, coal and ash conveyors, soot blowers and electric cranes.

The principal works of Babcock and Wilcox Limited are at Renfrew, Scotland, where about 5,000 hands are employed and they have branch works at Dumbarton, Scotland, Oldbury, England and in Italy, Australia and Japan. There also allied companies operating in France, Spain, Germany and Prussian Silesia. Branch offices are maintained in England and Scotland and at Brussels, Milan, Amsterdam, Sydney, Melbourne, Mexico, Lima, Rio de Janeiro, Bombay, Calcutta, Tokio, Johannesburg, Shanghai, Warsaw and Moscow.

The Babcock and Wilcox Company have their head office at New York and works at Bayonne, N.J., and Barberton, O., and they in addition a tube mill at Beaver Falls, Penn. where they manufacture boiler tubes. This company employs 3,500 hands.

The new organization will have the benefit of all the patents of the constituent companies as well as of the experimental and scientific work, the wide experience and engineering knowledge of the British and American companies.

In making the announcement of the completion of the large transaction R. O. McCulloch stated that the safe works would be operated as an independent company under the name of Goldie and McCulloch Co. Ltd. In the meantime they will use the present plant but it is expected that eventually this industry will be housed in new buildings.

When giving the details for publication Mr. McCulloch said that Babcock and Wilcox Ltd., the Goldie and McCulloch Co. Ltd., and the Babcock and Wilcox Co. desired to extend to their clients their grateful thanks and appreciation of the confidence extended to them in the past and expressed the hope that the new company would continue to deserve and receive it in the future.

Business Started in 1859

It was in 1859 that the late John Goldie and the late Hugh McCulloch purchased the Dumfries Foundry from James Crombie. The business experienced a steady growth and prospered. It remained a partnership until 1891 when it was turned into a limited company, the first president being the late Hugh McCulloch, Sr. He was succeeded in 1910 by his son the late Hugh McCulloch, Jr., Who remained president until his death in 1917 when the present occupant, R. O. McCulloch, was elected to the office.

The late John Goldie was elected manager of Goldie and McCulloch Co. Ltd. in 1891 and on his death in 1896 he was succeeded by his son, A. R. Goldie who subsequently became vice-president of the company.

POWER SHOW INCLUDES MATERIALS HANDLING EQUIPMENT

Shortage of common labor has driven the manufacturers of the country to an intensive study of the possible economies of material handling equipment in industry. The addition of material handling equipment to the National Exposition of Power and Mechanical engineering is therefore a very timely move as it furnishes a remarkable opportunity for executives and engineers in industry to study the latest developments in this art. The exposition is to be held in the Grand Central Palace, New York, from December 3 through 8, 1923.

The equipment to be exhibited will include conveyors of all kinds, fireless steam locomotives, industrial trucks, elevators, hoists and large scales. Many novelties are on the list and interested engineers will have an excellent opportunity to study each type, select the one most suitable for their particular problem and secure the cost data necessary for the decision.

Steel belting for the conveyors is a novelty in this country and one exhibitor is to install a working model of a complete system of steel belting conveyors The model will be one tenth actual size This type of conveyor is well suited for handling sticky materials sharp edge materials or materials at high temperature.

The handling of coal at the steam power plant is a severe problem and one exibitor will show a working model of complete coalhandling equipment in a miniature power house. The model will show a skiphoist, bunker, coal weigh lorry and cable drag scraper

A program of interesting motion picture films showing the application of materials handling equipment in various industries will also be displayed.

The power Exposition, held annually, features the development of apparatus for the economical combustion of fuel and the production and utilization of power. The managers of the exposition are Fred W. Payne and Charles F Roth with offices in the Grand Central Palace.

TO REPRESENT HOWDEN IN CANADA

James Howden & Company Limited, Engineers, Glasgow, Scotland, announce the appointment as their sole Canadian Representatives of the Combustion Engineering Corporation Limited with offices in Montreal, Toronto, Winnipeg and Vancouver.

Messrs. Howden are well known throughout the engineering world having been established since 1854. Their manufactures include: -

The Howden-Zoelly Steam Turbine in all sizes.
Vertical High Speed Enclosed Forced Lubrication Engines up to 2,500 B. H. P.
Howden-Weir Steam Condensing Plant

and various auxiliaries such as Engine-driven Ships Lighting Sets, Centrifugal Circulating Pumps and Forced Draft Apparatus, of which latter specialty installations agreggating more than 26,000,000 I. H. P. have been effected to date.

This company have also been the first within the British Empire to adopt and manufacture the Howden-Ljungstrom Air Preheater which is now said to be one of the most far reaching inventions that has been brought out in years, and is attracting widespread attention in all centres.

Messrs. Howden already have a thorough understanding of the Canadian Field, having operated in this market for some years, and latterly through their branch works located at Wellsville, N. Y. from which centre they have been enabled to give prompt service. Their most recent large Canadian contract has been an order from the City of Winnipeg for 2—5,000 K. W. and 1—1,000 K. W. Turbo-Alternators, complete with condensing equipment which are to be installed in the Municipal Hydro-Electric Steam Standby Station.

The Combustion Engineering Corporation are well known as manufacturers of boiler room specialties, including all classes and types of mechanical stokers, pulverized fuel and oil burning equipment, coal and ash handling apparatus, etc., and the combination in Canada of these two firms for the purpose of meeting both engine room and boiler room requirements is very interesting at this time.

Messrs. Combustion also announce the appointment on the Board of Directors, with headquarters in Montreal of Mr. F. S. B. Heward, who, for the past five years, has been Vice-President and Managing Director of the Howden Company in America.

HANS LAGERLOEF, President and Treasurer
ORVAR HYLIN, Vice President
MAURICE LONDON, Secretary

TRADE MARK

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WOOD PULP

SOLE AGENTS IN U. S. A., CANADA, MEXICO AND CUBA FOR

Finnish Cellulose Association
Helsingfors, Finland

AND

Finnish Wood Pulp Union
Helsingfors, Finland

Getting On in the World? or Just in Years?

DO YOU KNOW that the surest and safest investment you could make is to put money into increased earning capacity?

DO YOU KNOW that every man who works well on his own job, but in addition studies the job higher up, gets there eventually?

DO YOU KNOW that when you start to study, you put yourself into a different class?

DO YOU KNOW that only one man in fifty will be competing with you?

DO YOU KNOW that the Pulp and Paper Industry of this continent is looking for that one man in fifty?

DO YOU KNOW that the industry has spent $50,000 to help that one man in fifty?

DO YOU KNOW that there is a school for Pulp and Paper Makers with textbooks written by Pulp and Paper Makers?

DO YOU KNOW how to read and write?

THEN

WHY NOT write for
Syllabus and Application Blank

TO

Institute of Industrial & Domestic Arts,
Gardenvale, Que.

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Pulp and Paper Magazine
OF CANADA

A Weekly Magazine Devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades

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:-: EDITORIAL :-:

A PROBLEM AND A SOLUTION

At the close of its last year's activities, there was some question as to whether or not the Montreal Paper Club would be continued. At the beginning of the season this year, the Club met and elected officers, and has continued to hold its regular monthly luncheon meeting. The meeting which was held on Tuesday of this week would fully justify the carrying on of the organization if nothing further were done. But the Paper Club is doing other things, of course, which still further emphasize its importance and justify its existence. Toronto has a very successful Carton Club, but we are unaware of any similar organization in other cities, although we feel sure that there is a field in several other localities for the formation of such Clubs as these. They might very well be the nucleus of local sections of the Canadian Paper Trade Association, or of the Canadian Paper Box Makers Association. It might also be mentioned that while the problems of the paper salesmen are not those of the paper box maker, yet there are occasions where a topic that is of interest to one would also be of interest to the other.

The immediate subject of the following brief remarks is the very pertinent and pressing one of the situation with regard to our forest resources. As has been repeatedly remarked in these columns, the principal source of danger to our forests is the fact that the Canadian people do not realize that their own individual jobs depend ultimately, more or less on the perpetuation of our forest growth. It makes little difference whether we are selling shoes or printing books, it is a fact that the industrial prosperity of this country is very largely dependent upon the prosperity of the Pulp and Paper Industry, and that together with its permanence is, of course, directly dependent upon the condition of our forests. Everybody in the industry knows that there are a number of other very important problems, but there is no other problem which so vitally affects the whole of the people of Canada as this one of raw material. The most perfect system of apprenticeship, the most infallible management and the most insistent demand and extensive market all become useless if the raw material supply should fail.

In his address to the Montreal Paper Club on Tuesday, a summary of which is given on another page, Mr. George Carruthers, vice-president of the Canadian Pulp and Paper Association, pointed out that for perfectly obvious reasons, the responsibility for maintaining forests in a permanently productive condition, rests properly with the Government who own the land on which these forests have grown or are growing. A man, a company or a municipality that owns houses and obtains an income from their rental would not think of permitting such property to go continually unpainted, nor without adequate insurance. There is also the insistence on a certain degree of care on the part of the tenants. The loss of a few shingles on the roof from a wind storm, the demolishing of a chimney by lightning, the crumbling of a foundation by ice conditions, or any damage by fire would be immediately remedied. Yet our Provincial Governments are in exactly the same position as landlords with respect to the wood-using industries of Canada, operating on crown land, as the owner of a house is to his tenant. The difference is that a house will eventually tumble down whereas the forest can be maintained in a state of perpetual income-producing condition.

The principal reasons that our forests are not maintained in this condition are that the people of Canada do not realize that this property belongs to them, and that they are entitled to an income from it during their life time, and their descendants to unnumbered generations will be entitled to an income year after year. A man keeps his house in order that he may hand it down to his children, but our Governments are not keeping our forests in a condition to pass on to future Canadians. As Mr. Carruthers pointed out, we are now using wood faster than it is growing. You cannot take bricks out of a foundation and expect the house to continue to stand.

Mr. Carruthers outlined a program of educating the Canadian public which has all of the elements of success, and we believe could be carried out to the assured benefit of the country. Recognition was made by the speaker of the excellent work done by the Canadian Forestry Association and other organizations, but the fact remains that the conscience of the people has not been properly pricked as yet, and a comprehensive, concentrated, well aimed campaign of individual shots cannot be got under way any too soon.

WARWICK BROS. & RUTTER

Nineteen years before the confederation of provinces which now constitute the Dominion of Canada, William Warwick, then scarcely more than a lad, found himself in a young, thriving town of Woodstock, Ontario, at that time reached only by a wagon road. With a courage and vision which is more or less typical of the pioneers in both agriculture and industry of those days, William Warwick started a small business of his own as a stationer, and now 75 years of continuous service to a large portion of the people of Canada have resulted from this small beginning, and Warwick Bros. & Rutter constitute a lasting monument to the character of the founder of the firm. The story of this 75 years of the business is most entertainingly and interestingly told in a memorial volume recently issued by the firm. It is a heroic story, an account of problems met, of difficulties and discouragements overcome, many of which might easily have daunted a more resourceful and determined character. Canada can well be proud of the record of this concern, and we are sure the pulp and paper industry extends to them sincere congratulations on the occasion of their Diamond Anniversary.

VOLUME IV

The Pulp and Paper Magazine has been receiving a number of letters inquiring as to when volume IV of the textbooks on Pulp and Paper Making will be available. It is a pleasure to announce that the last of the page proofs have been returned to the publisher and that the index will be completed this week.

This volume will contain 538 pages of text, including 174 illustrations together with a preface and a very extensive index of subjects. This volume, as in the case of the three preceding ones, will be sold at $5.00 per copy, although there are several sections in it which individually would be easily worth the price of the volume. The publishers are proceeding as rapidly as possible with the printing of this book, and its typographical quality and appearance will be, of course, equal to the preceding volumes which have received so much favorable comment. If all goes well, it is possible that the book will be ready for distribution before the end of the year, and we suggest that a copy would make an excellent Christmas present as a companion volume for volume III for anyone in the paper industry. Volume III deals entirely with the manufacture and treatment of pulp, and volume IV deals altogether with the preparation of stock, the coloring and making of paper. This broad subject, however, is continued in volume V for which the manuscript is now being rapidly prepared.

Happiness escapes the man who runs after it. It overtakes the man who tries to make others happy.

AN UNPLEASANT REFLECTION

A report from London, printed in a Montreal paper, ascribes to Sir Frederick Becker the statement that Becker & Co. put a large amount of cash into a certain Canadian pulp mill and that matters were so manipulated as to jeopardize, if not sacrifice, the investment. The result, it is claimed by Sir Frederick, is to deprise Becker & Co., of their rights and put the business in Canadian hands. The Pulp and Paper Magazine will refrain from further comment, as a statement from an authoritative source appears on another page of this paper.

THIS MOTHER WANTS HER BOY

The following letter has been handed to the Pulp and Paper Magazine, in the belief that we might be of some assistance in helping a loving mother locate her lost boy. If any reader has any knowledge of Max Semrow, he will be doing a very kind act by communicating with the man's mother, whose letter is given without change.

Nekoosa, Wis.
Nov. 13, 1923

To whom this may concern:

Will you kindly let me know if there is any one by the name of Max Semrow who works in that mill.

We do not know where he is and I would give any thing to know, he is my dear boy, he and wife left a year ago in June and he spoke of going to Canada, so knew of a mill in Quebec, so thought may be I could get some clue.

He married a girl from Cheboygan Michigan by the name of Amy Beouporlond come home for a while then his wife left for Michigan for a visit with her people then he left in about a month and I never heard from him since. Will you kindly let me know at your earliest conveniences and Oblige.

From his Loving old Mother,
Mrs. Albert Semrow,
218 — 12*th St. N.*
Wisconsin Rapids, Wis., U. S. A.

OVERSEAS PARTNERSHIPS REQUIRED

The Prime Minister of Canada has repeated his request to the British public for men and money to assist in settling our land, developing our natural resources and expanding our manufacturing activities. This was the substance of his first address on landing in England, and now, towards the end of his visit, he repeats it. The topic is certainly of sufficient importance to warrant repetition again and again; but we are rather fearful that the impression will spread abroad in Great Britain that Canada's attitude to the mother country is that of a child to its parent, rather than that of the full-grown daughter, who is in charge of her own house and wishes merely the coöperation and mutual support that is the essence of natural family relations, where grown-ups are concerned.

Handling Materials in Pulp And Paper Mills

In this age of high labor costs the large industries are rapidly adopting all available methods of conserving labor and reducing costs. The handling of raw materials, stock and the finished product represents cost items that can often be reduced by the installation of adequate equipment. Many developments and improvements have been made in recent years in handling machinery and the modern tendency is to eliminate, as far as possible, the wasteful manual movement of materials.

The Waste Committee considered it advisable to gather all available data and illustrate the special application of handling and conveying equipment applicable to the pulp and paper industry.

Classes of Material Handling Problems

Every handling problem is a special study in itself although in general mechanical equipment should be considered whenever the following conditions are evident.

1. Continuous stream of materials to be moved over 50 feet.
2. Continuous lifting of loads.
3. Elevation of quantities of materials.
4. Lowering of quantities of materials.
5. Whenever materials require ½ hour or more of manual labor to be moved intermittently.
6. Continuous movement of materials for a distance of over 6 feet.
7. Continuous assembly work.

Classification of Handling Equipment

Although much of the equipment used in handling materials has been developed for some particular purpose it is often adaptable to conditions in other industries. In general, the classification of the different kinds of material handling machinery is as follows:

1. Hoisting machinery.
    1. Cranes.
        - (a) Overhead traveling.
        - (b) Gantry.
        - (c) Jib.
        - (d) Steam, electric and gasoline.
    2. Hoist
        - (a) Hand chain.
        - (b) Pneumatic and electric.
        - (c) Monorail and telphers.
    3. Derricks
        - (a) Stationary.
        - (b) Portable.
        - (c) Light duty.
    4. Excavating Machinery
        - (a) Power shovels and dredges.
        - (b) Dragline excavators.
    5. Cableways
        - (a) Cableways.
        - (b) Cable tramways.
    6. Loaders and Unloaders
        - (a) Loaders (conveying, projecting, tilting).
        - (b) Unloaders (scrapers, tilting, suction, tower)
    7. Winches
        - (a) Hand
        - (b) Power
    8. Accessories
        - (a) Buckets
        - (b) Grapples
        - (c) Baskets
        - (d) Magnets

II. Package handling conveyors and elevators
1. Arm elevators
2. Suspended tray elevators
3. Push bar and drag elevators and coveyors
4. Apron elevators and conveyors
5. Belt conveyors and elevators
6. Gravity roller conveyors and spirals
7. Smooth chutes and spirals
8. Overhead track conveyors.

III. Loose material conveyors and elevators
1. Bucket elevators
    - (a) Centrifugal discharge
    - (b) Perfect discharge
    - (c) Continuous discharge
2. Elevator conveyors
    - (a) Gravity discharge
    - (b) V-bucket
    - (c) Pivoted bucket carrier
3. Conveyors
    - (a) Belt
    - (b) Apron and pan
    - (c) Flight and drag
    - (d) Screw or spiral
    - (e) Reciprocating
    - (f) Current (pneumatic, steam jet, hydraulic)

IV. Elevators
1. Electric
2. Hydraulic and steam hydraulic
3. Pneumatic
4. Hand power and portable

V. Trackless transportation
1. Hand trucks
    - (a) Lift platform
2. Storage battery and gasoline trucks and tractors
    - (a) Lift
    - (b) Platform
    - (c) Dump
3. Motor trucks and trailers
    - (a) Demountable bodies
    - (b) Platform and dump

VI. Industrial rail transportation
1. Cars (all types)
2. Locomotives (all types)

VII. Special coal storage and handling equipment

VIII. Locomotive crane
2. Travelling gantry crane
3. Belt conveyor

---

[1] From Progress Report of the Committee on Waste, T. A. P. P. I.

4. Overhead

Handling Material in the Paper Industry

There is a wide application of handling equipment in pulp and paper mills and practically every class and type of handling machinery is used to transport raw and finished materials or stock in process. The principal classes of materials handled are:

1. Coal and ashes
2. Lime, limestone, sulphur
3. Pulpwood and logs
4. Wood chips
5. Rags and old paper stock
6. Pulp
   (a) Slush
   (b) Lapped or dried
7. Paper
8. Materials in machine shop
9. Supplies, stores and miscellaneous materials.

1. Coal and Ashes

One of the most effective and economical methods of handling coal is to dump it from hopper cars through the coal crusher to the boiler house. Various types of conveyors are used to handle the coal to the bunkers or the boiler room and some of the most common in use are the pivoted bucket, skip hoist carriers and the flight conveyors. The locomotive crane with a clam-shell or other special coal handling equipment is often used to good advantage depending on conditions. The coal car dumper which unloads the coal by tipping the car upside down is used where a large volume of coal is handled.

The location of most mills makes it necessary to store large quantities of coal. Where the storage facilities are not the best, the cost of moving coal to and from storage is an important item. The locomotive crane or the gasoline crane on a caterpillar tractor is often used to store coal. A very effective system of handling to and from storage is the drag line scoop conveyor. Whenever it is necessary to load teams, trucks or cars, the portable belt and bucket conveyors are very effective. Both gas and electric power units are available. Many large power plants are equipped with traveling bridges, overhead cableways and other machinery to handle coal. In small plants the belt or the belt and apron conveyor can be used to good advantage.

The trestle is a common and economical method of storing coal when dump bottom cars are available. A belt conveyor system in an underground tunnel may be used to remove the material from storage to the plant. A disadvantage of this system is that coal dumped from a trestle tends to break up and the lumps and fines will become segregated. This produces a condition that may cause spontaneous combustion.

In the handling of ashes the scraper conveyor and the pivoted bucket conveyor are effective pieces of equipment. The latter system is often used to carry the coal to the bunkers and also to remove the ashes. Various kinds of other buckets and belt elevators and conveyors are also used to handle ashes.

The steam jet ash conveyor has replaced manual removal of ashes in many old plants with good results. However, the cost of handling ashes by steam is usually more expensive than by good mechanical conveyor system. The removal of ashes by water has been adopted by several power plants. One of the largest and most modern central power stations in the country, the Hell Gate power plant in New York City, uses a hydraulic sluice lined with tile to carry the ashes to the ash pit from which they are loaded into a scow with a clam shell.

The pneumatic handling of ashes is sometimes used with satisfactory results. This requires a large suction fan of special design.

2.—Lime, Limestone and Sulphur

The local conditions of handling and storing lime, limestone, sulphur and other loose materials require different treatment, although in general, one of the many belt, flight, apron and pan or bucket elevators and conveyors can be adapted to the conditions. Limestone may be stored by the trestle system mentioned in connection with coal storage.

If the material is in open top cars, the crane with a clam or orange peel bucket does economical work. Sulphur and lime are usually shipped in box cars and unloading is disagreeable work. The scraper type of unloader is used for some materials and an arm scraper arrangement is also employed. The sugar cane industry uses a car tipping device to a large extent in unloading box cars. A similar arrangement might be adopted to handle some of the materials used in the paper industry.

3.—Pulpwood and Logs

Water transportation is without doubt the easiest and cheapest method of conveying pulpwood and it is used whenever possible. Many mills are equipped with flumes to convey their 2 or 4 ft. wood to the mill and often deliver the pulpwood into the grinder room by water.

One of the most common and efficient conveyors used for pulpwood is the cable and button type of carrier in a V-shaped trough. The size of this conveyor is made to suit the conditions and it may vary from a few feet long to a complete installation 1,000 ft. or more in length, for piling and removing wood from the storage pile. A recent development is the adoption of a cable with welded button attachment that prevents slippage. A majority of these block pile storage systems have two steel or concrete towers with trestles between although a recent development is the use of towers and cable alone and the pulpwood blocks are distributed by a series of portable conveyor sections which are extended as the block pile grows.

The single chain drag conveyor with a lug is extensively used for short distances and for portable pulpwood conveyors. Multiple chain drag conveyors can handle large quantities of 4 ft. wood in the wood room. The pulpwood stacker, which may be stationary or movable is usually a chain drag type of conveyor and its use results in a great saving of storage space. The roller chain is an extremely economical type of conveyor equipment and uses less power than the other chain conveyors.

Where conditions permit, the chute is extensively used in pulpwood handling and the gravity roller is sometimes applied effectively.

In the groundwood mill small trucks, both track and trackless, are much used to transport the wood but the principal reason for handling it in this manner is to obtain a measurement of the quantity consumed.

A recent development in the handling of 4 and 8 ft.

wood and also long logs is the use of a crane equipped with a special wood grapple. This is especially adapted to loading and unloading open cars and storing the wood or logs in regular piles.

The most common conveyor for handling long logs from the water to the cut up plant is the jack ladder which is one type of arm elevator. Button and chain drag conveyors are also common.

Handling long logs from cars to the storage pile by the cableway is a very effective method. Cranes and derricks are often used but the range of piling is not usually as great as that of the cableway. If double tracks are used the locomotive crane has a wider range and a minimum of switching is required. Button cable and chain drag conveyors are used to a limited extent. The gantry crane is largely used in European countries with considerable success in pulpwood handling to and from storage.

4.—Wood Chips

An effective method of conveying wood chips is by a wide belt conveyor. Due to plant conditions, it is sometimes necessary to lift the chips from the wood room to a considerable height by a bucket elevator of the centrifugal discharge type. This method is often used together with the belt conveyor and is very effective. Chain and drag conveyors, as well as screw conveyors are sometimes used for short distances as is also a special type of large link scraper chain. Some mills use a fan and pipe to move the chips to the loft. A disadvantage of this is the breaking of the chips resulting in sawdust.

5.—Rags and Old Paper Stock

Rags and old paper stock usually come to the mill in bales and a large number of package handling conveyors and elevators are in use. The various types of push-bar, drag and apron conveyors and elevators are adapted to meet the conditions.

Gravity roller conveyors and straight or spiral chutes can often be effectively used to lower bales and other package materials.

The overhead track conveyor with a hoist is sometimes used to handle bales or barrels under particular circumstances. The electric truck with a lift is used to reduce the number of hand and box trucks that are used to large extent in handling stock throughout the mill because the materials in process are moved more rapidly.

A belt or apron conveyor is often used in the sorting of rags and book stock and air is sometimes employed to handle the sorted and dusted material.

6.—Pulp (Slush)

Pumping stock in slush form is probably the most economical method of handling pulp. With the methods and equipment now available for controlling and measuring deckered slush stock it is possible to get as correct quantities and proportions as it is with lapped stock which is weighed on platform scales and corrected for moisture.

Most mills use the hydraulic method of conveying pulp wherever possible. It is feasible to pump stock of a density up to 6 per cent but pulps of higher consistency require more power. Slush pulp of low consistency is now being pumped 2 to 3 miles and in one new project it is planned to pump it a distance of approximately 9 miles. However, it is important to use pumps especially designed for the work to get good results. Modern newsprint mills have complete slush systems and no lapped pulp is used. This has made an appreciable saving in the cost of manufacturing paper

The worm or screw conveyor is effectively used for stock of high density and for short distances under certain conditions. The ordinary bucket elevator is also employed in a number of cases.

6.—Pulp (Lapped)

The handling and storage of lapped pulp presents one of the most costly and complicated of all transportation problems in many mills. Much hand labor is necessary in piling and trucking the lapped stock to and from the storage pile into the paper mill where it is used.

The more general use of the lift truck both hand and power, together with platforms, has eliminated much rehandling of laps. The platform is a great labor saver. Several mills ship pulp on platforms and have them returned thus eliminating the loading and unloading of the box cars. The platform is sometimes used in combination with the monorail hoist and telpher and sometimes the cable tramway is used to a good advantage

The various package handling conveyors and elevators are extensively used to handle laps. Perhaps the simplest is the belt conveyor which is often equipped with push bars. Various types of apron elevators and conveyors are used to a large extent both in the storage piles and in the mills. The gravity roller is a very effective conveyor on a pulp pile and for short distances in the mill. It is flexible because it comes in sections that can be moved as desired. The smooth chute is applicable and the lowering of pulp and other materials from one floor to another is effectively done by both the chute and gravity roller spiral.

The various conveyor systems used to some extent for lapped pulp can be used for dry sheets and baled pulp. In addition the various types of cranes, cableways and hoists may be adapted to handle the material at a minimum cost.

7.—Paper

The hand truck is largely used to transport rolls of paper although the electric truck is supplanting it in large mills and saves time and labor. Rolls are also handled in the mill and sometimes to the cars by various types of chain, pneumatic and electric hoists on an overhead track. One mill on tidewater uses the monorail and telpher to transport news print rolls from the mill to the hold of the ship.

The industrial rail method of transportation together with the electric or pneumatic hoist move rolls from one department to another. Small hand and power cars are built to carry the rolls and the loading and unloading platforms are the same height to facilitate the transfer of the rolls.

Power elevators are in common use where it is necessary to lift rolls for storage or shipping and the inclined cableway elevator on tracks is used to convey rolls up a long incline.

Sheet paper and small rolls are usually handled by equipment similar to that used to transport rolls. The various package handling conveyors are used whenever conditions permit.

The hand and power lift truck with platforms is also used both to handle sheets and bundles in the mill and often employed to load cars.

Power trucks and tractors with trailers are effectively used to transport paper between plants or to storage. The demountable body is applicable to handling some commodities.

8.—Materials in Machine Shop

Many kinds of materials are handled in the repair departments of a paper mill and equipment must be developed to suit the conditions.

The chain hoist is probably the most common and effective handling equipment and is used for many purposes. The overhead traveling crane is an important piece of equipment in handling heavy repair parts.

Electric and pneumatic hoists are used for small parts and when combined with an overhead track are effective and flexible handling machines. Gantry and job cranes are often used to advantage and a small portable derrick is sometimes very effective in moving machine parts. A hand or power winch can be used under some conditions.

The hand truck and special push trucks for press rolls, etc., are indispensable in the machine room and machine shop. The industrial power truck can also be used in many cases to move materials, both large and small, with a great saving of time and labor.

9.—Miscellaneous Materials

The movement of supplies, stores and miscellaneous materials in a pulp mill is a distinct problem at every plant depending upon the commodity and location of the storage space.

Much small material is handled by the regular automobile trucks when the hauls are sufficiently long. The industrial power truck with the platform lift is also a very convenient piece of equipment. The traveling crane and the hoist with the overhead track is applicable for many purposes. The hand truck is indispensable in moving all kinds of materials and the portable elevator is very effective in piling barrels, bags, boxes, etc., in the store room.

Conclusion

A marked advance in the mechanical handling of materials has been made in the past ten years. This mechanical development will, doubtless, continue not only because of the reduction in costs and the lessening of labor but also to eliminate the wasteful use of human energy wherever it is possible to do the same work as economically by mechanical means. Human energy, in the last analysis, expresses itself in thinking and it is unintelligent to put it to use where its accomplishment is mainly measured in foot pounds.

References: "Cyclopaedia of Handling Materials," Zimmerman's "Mechanical Handling of Materials," Management Engineering, Industrial Management. (See also Hetzel's "Belts and Belt Conveyors".)

The Committee

The Committee on Waste of the Technical Association of the Pulp and Paper Industry includes: R. B. Wolf, Chairman; G. D. Bearce, Vice-Chairman; W. G. MacNaughton, Secretary; O. L. Berger, H. P. Carruth, P. K. Fletcher, H. H. Hanson, F. R. Hyatt, H. O. Keay, Ernst Mahler, F. J. Morrison, H. F. Obermanns, J. E. Plumstead, R. B. Robertson, J. D. Rue, H. S. Taylor.

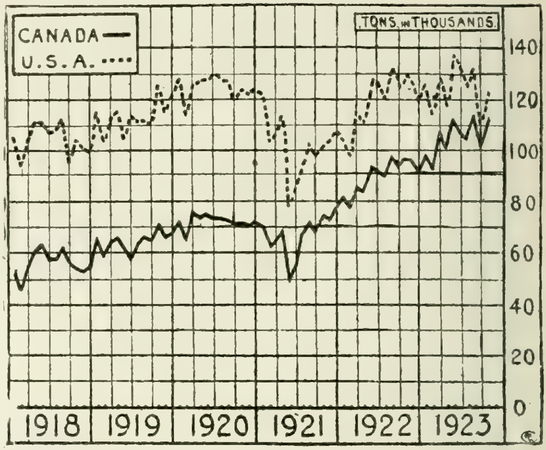
NEWSPRINT PRODUCTION IN OCTOBER

Newsprint production in October was greater than in September both in Canada an the United States. Canadian mills showed a gain in output of 11.7 per cent. over the previous month, while the production of the United States mills was greater by 10 per cent.

Canadian production in October was 114,475 tons, very close to the record high figure of 114,721 tons in August.

U. S. production for the month was 122.073 tons.

The accompanying chart, supplied by the Canadian Pulp & Paper Association, shows the monthly production for the two countries over a period of years:



For the first ten months of the year, compared with the corresponding months of 1922, the production figures are as given below:

	Canada	U. S. A.	Total (tons)
10 months, 1923	1,059,295	1,251,290	2,310,585
10 months, 1923	896,840	1,200,301	2,097,141

MANOUAN BONDHOLDERS HEARD FROM

Holders of bonds of Manouan Pulp and Paper, Limited, have received a communication signed by Thomas Allan, Geo. A. Fraser, and W. W. Marshall, which reads, in part, as follows:

"The undersigned has been constituted a Cash Bondholders' Protective Committee to protect the interests of the bondholders of Manuoan Pulp and Paper, Limited, who have paid money for their holdings in good faith. A meeting of bondholders will shortly be called to consider two proposals for cutting the wood on the property over a term of years. For these and other reasons we feel that the holders of bonds purchased for cash should unite for mutual protection." The bondholders are asked to forward their bonds and stock to the Eastern Trust Company, to be held in trust by them and to be voted by the committee in question on any motions that may come up at the meeting. The communication concludes: "We shall be glad to give you fuller particulars of these proposals, but it is necessary that you should send your securities in at once."

Almost nothing has been heard of this proposition for some time, but if money talks, the bond holders are still listening. A glowing prospectus was issued in 1920, when the goose hung very high and preliminary steps were taken in connection with a groundwood mill.

Our Forests Past Present and Futuae

Executive Secretary, American Paper and Pulp Association

By DR. HUGH P. BAKER

At the request of a prominent newspaper editor of the Middle West, Dr. Hugh P. Baker has written a series of brief letters on the forestry situation in the United States, reviewing the early story of the forests, present developments, and the problem of the future. What he says of the United States applies also to Canada.

The dependence of the industries of the country upon a cheap and reasonably permanent supply of wood is very apparent when consideration is given to the present day prices of lumber, of pulpwood and even of cordwood.

When we think that at one time white pine forests covered the country in an almost continuous belt from Maine to Minnesota, and that now it is possible to go into the lumber markets of the large cities and buy mahogany from Madagascar or Central America cheaper than we can buy first grade white pine lumber, we realize that we are facing some very definite forest problems. But the advance made in the price of lumber is not only indication of diminishing supplies of wood. Pulpwood for the manufacture of pulp and paper, which a few years ago cost from $4 to $6 a cord, is today costing from $14 to $20 a cord. Cordwood which has been the great source of fuel in this country, and is yet a source of fuel for smaller communities, is costing today all the way from $12 to $30 a cord. Into the prices of lumber and other forms of wood there enter, of course, numerous different factors such as the increased cost of labor, increased transportation cost, unfortunate methods of taxation and other factors besides diminishing forest area.

The dependence of the daily press and of the magazines of the country upon a reasonably cheap and permanent supply of wood, while not so apparent as with the construction, the furniture and the pulp and paper industries, is as fundamental and complete. The paper industry is a wood using industry. All of the paper used in newspapers and magazines is made from wood. Increase the scarcity and cost of pulpwood, and the cost of producing newspapers and magazines is increased. The press of the country should be and can be the leader in developing the practice of forestry by the several states and the Nation.

Burden of Freight Costs

One of the heaviest burdens borne by the public in meeting the needs of today for lumber and wood is the price, which, after all, the public is paying, for freight on wood brought into eastern markets from the far south or the northwestern forest states. It is estimated that in 1920 the city of Chicago paid over $24,000,000 for freight on lumber and other wood products brought into the city for use or distribution. A few weeks ago, while in the Central Adirondacks, attention was called to new buildings just erected in connection with a summer resort development. When one appreciates that nearly all the finished lumber going into these buildings, situated as they are in the center of a forest area of over two millions of acres, was brought from Washington and Oregon, of Louisiana and Texas, it is easy to understand the price we are paying for our indifference in this forestry question.

As the present forest situation and the pressing needs of our industries and of our people generally for products of the forest are becoming better known the question is being asked more often as to what can be done. What is the solution?

The first and most important step to be taken in protecting, preserving and increasing our forests is to stop forest fires. Several of our States have made fine progress in applying methods of protection of the forests from fire. New York State is a leader in this work and yet we are having forest fires and will continue to have them until the public understands more thoroughly the necessity for protection of our forests from fire, and until there can be greater appropriations by both the Federal Government and the states for forest protection.

Preventing Forest Fires

It is probable that there are very great areas of cut-over lands, particularly in New England, the Lake States and the South, that will reforest themselves naturally if fires can be kept out. It is feasible to keep fires almost entirely out of the forest. We prevent and fight fires in the forest just as in the cities that is, we try and organize the forests so that it will be difficult for fires to start, but if started, that they may be overcome immediately. Using the practice of fire fighting common in our cities, we must have means of knowing immediately where fires start in the forest and then have trained men with the right kind of tools to get to the fires immediately to put them out. Observation towers, supplemented by telephone and patrol system, are among these requirements. In most of the forest countries of Europe fires do less damage in the forest than insects and fungi, and we must seek the same end here.

The second step is to change present wrong methods of taxing forests and forest lands. Our forests have been wrongly taxed down through the years with the result that more forests have been wasted in this country through bad methods of taxation than have been used by the entire furniture industry, for example. No farmer and no business man could do business under methods of taxation as now applied to the forests. Instead of taxing the forest crop annually, forest lands should be taxed on the basis of yield, that is, there should be a low general tax on the land as there is on agricultural land, and then when the forest is cut there should be a tax on the yield of wood. Many a lumberman has been forced to cut his timber simply because it was being taxed out of existence. It is not easy to change tax laws in America, but the methods of taxing of our forests must be changed before there will be any considerable practice of forestry by private owners.

Need for Artificial Reforestation

A third step necessary in bringing back our forests and making them productive is to begin reforestation upon lands which have been so denuded that they will not come back to forests even if they are protected from fire. It is estimated that we have over 80.000,000 acres of forest lands so thoroughly denuded that we must replant them artificially to get them back into forests. It will be expensive to plant and wait for the first crops from the forests. So it has been expensive to build great highways up and down the country, but when the public finally awakens to the fact that it is paying a tremendous price for inaction it will demand a comprehensive reforestation program that will pull our idle acres to work and put us far ahead in the solution of our wood problem.

It does not take 150 years to grow a crop of trees. We have held that idea generally in this country because a virgin forest grows slowly and the big trees are often that age and more. A promptly planted and managed forest of such evergreens as the spruce and the pine will begin to give us returns on the investment in from 16 to 30 years, and thereafter we shall have regular periodical returns which will pay more than a fair return upon the investment.

Forestry Policy Necessary

Finally the public should demand that Congress have a sensible National Forestry Policy. It is inconceivable that this great Nation of ours has come down to 1923 without such a policy. Able men have been working as foresters for more than 20 years in this country and know what must be done and what is a practical forestry policy. We haven't as yet the interest and support of a sufficiently large part of the public to secure action by the Congress.

The Chamber of Commerce of the United States, which has taken farsighted leadership in many of our national problems, appointed more than two years ago a Committee on a National Forestry Policy. This Committee held hearings from coast to coast and now has a very comprehensive report before the Chamber. This report when sent out for referendum to the 1,400 and more constituent bodies of the Chamber will have very great educational value. The forest schools and state departments of forestry have been carrying on, often with very meagre funds, really effective educational work.

The forestry problem of this country is such a big one, however, that in a sense a generation must be trained from boyhood to appreciate what must be done and how it is to be done. The press of the country is taking great interest, but it must take greater interest in this nation-wide problem. The foresters of the country are looking to the press as never before for the assistance which only the press can give in awakening the people so that they will demand action and that immediately.

BECKER SPEAKS: BEIQUE REPLIES

Under date of November 18, the London correspondent of the Montreal Gazette sent a cable dispatch which attributes the following statement in connection with the difficulties of Becker and Co. and associated paper companies to Sir Frederick Becker at a meeting of the Donside Paper Company at Aberdeen after his return from Canada. It reads:

He stated that he and his associates had invested in Canada in advances on preference and ordinary shares £1,250,000 actual cash. "It seems this is to be wiped out and our properties to be acquired by Canadian interests for nothing. We have struggled through a difficult time, we have created the biggest sulphite and mechanical pulp mills in North America, and have reached a point where both enterprises are on a profitable basis. This is the moment chosen to acqure what we have created, by a stroke of the pen. Becker's made the Chicoutimi Company advances, during the shutdown brought about by an unparalleled drought last winter, of $500,000, raising the sum owed by the Chicoutimi Company to nearly £300,000. These advances were made under definite promises of adequate security, but the security had a trick of evaporating in the same way as apparently our interests and investments in Canada are to be made to evaporate, and my endeavors in Canada were frustrated by an unconscionable effort to set off our claims for cash advanced by claims for old deliveries, unproven and largely unprovable.

"Having created with the company's assistance Ha Ha Bay mill, an endeavor to put the Chicoutimi mill on a sound basis was made. In this re-finance, which was entirely agreed to and encouraged by all concerned, certain ordinary shares fell into the possession of the board of the Chicoutimi Company, controlled and dominated by the Bank of Hochelaga. The means by which we were to be wiped out now became revealed. Eleventh hour exactions were made after my return to England in March, which left the company with little working capital, but capital commitments. In June the head of a friendly Canadian financial group, with whom I had been negotiating, was in London, and I understood he had placed a large issue giving the Ha Ha Bay mill adequate working capital in addition to increased capital. Judge of my astonishment when permission for this issue was agreed to by two-thirds of the capital, but, needing three-quarters, was refused by the very person whom he have been trying to help. This was accompanied by the withdrawal of most of the ordinary credits. The paper mills, which stood behind us, were clamoring for assistance from Becker and Co. The moment was indeed, well chosen for the Canadian interests, we read of to acquire our investments."

Senator Beique's Statement

"I do not desire, at this stage to enter into any discussion with Sir Frederick Becker," said Senator F. L. Beique, in an interview with Financial Service Limited, this week. "I may say, however, that the books of the Saguenay Pulp and Power Company and its subsidiary, the Chicoutimi Pulp Company, as audited by Messrs. Marwick, Mitchell and Company up to October 31st, 1923, show a large balance against Becker & Company, Limited.

"I may further add that Sir Frederick has grossly abused the power given him and interfered with the affairs of the Saguenay Pulp and Power Company and its subsidiaries to an unbearable extent, which called for the cancellation of the selling agency.

"For the last few months, the Company had to insist upon being paid cash for its pulp which was very unpalatable to Sir Frederick and his firm. Events have proved the wisdom of the course.

"It is quite true that we refused to authorize a new finance of the Bay Sulphite Company, Limited, as conceived by Sir Frederick Becker, because it was again but a make shift, and would have seriously impaired the value of the 45 per cent. of the stock of that Company which is held by The Chicoutimi Pulp Company."

Personal Engineering

By G. R. HEASMAN

How many employers stop to calculate their labor turn over? The general manager of a paper mill will insist on having the exact cost of a pound of paper laid down at the mill figured out, he will know the actual running expenses of each department, and will cut down overhead expenses to the bone, if necessary, to save money, but will at the same time be indiscriminately "hiring and firing employees. The "hire fire" policy is the road of least resistance and hence adopted. The result of such a policy is not so evident as would be an increase in the price of some commodity directly affecting the paper. However the result, though perhaps not apparent, is there just as important. It is there in decreased efficiency, it is to be found in mistakes repeatedly made by new hands. The result is there is disatisfied customers not receiving their shipment as per schedule, or their documents according to instructions given. The cost of this policy is to be found in interviewing new applicants, instructing new men regarding their duties, wear and breakage of machines due to their handling by unskilled men; reduction in production and cost of work spoiled by inexperienced men, these are all part of the price paid for the "hire-fire" policy of dealing with employees.

The cost and the harm of a large labor turn over is incalculable, its results are so indirect, the harm it does is so seldom noticed or appreciated, that only a close study of it, will bring cold facts to light.

The problem of inducting men into industrial positions where they will fit is no longer a simple one. In fact it presents one of the most difficult phases of modern industry. Factory managers have no doubt long been aware of it in a vague sort of way, but the majority have not made a study of its economic side. It has been found by investigators, after going carefully over the employment rolls of twelve mills, that 73 per cent of the employees engaged during the year had not worked in these mills before. This may not, it is true, represent average conditions, but this constant shifting is certainly a great industrial loss.

The labor turn over of a factory can best be measured as a percentage, and is found by taking the number of men hired during the year over the average number of employees for the year. But this of itself will not give a correct idea of the stability of the force, because the ratio may have been increased by a small proportion of the force changing several times during the year. For example if the number of men hired during a year is 500 and the average number of employees is 1,000 the labor turn over would be 50 per cent. but this may have been caused by one tenth of the force changing five times during the year. Thus while the labor turn over is 50 per cent. the number of employees who remained in the employ of the company would be 90 per cent.

The causes of labor turn over, are many and varied and are well known to employment managers. On the employee's side will be found insubordination, laziness, incompetence and a general desire to look for green fields. On the side of the employer may be found disagreeable working conditions, low, remuneration, and inefficient management. Investigation has shown that incompetence on the part of the employee, accounts for a large proportion of the labor turnover. However, the average employer is partly to blame, due to the faulty methods of selecting employees. If business conditions are good and rush orders are on hand, the first applicant gets the job. It is only where some of the larger firms have an employment manager that the proper attention is given to the employment of new men, by investigating the records of applicants and studying the general source of labor supply.

Mr. Alexander, has after careful investigation on the cost of labor turn over, come to the following conclusion, which can best be summarized in the form of a table—

	Hiring	Instruction	Breakage	Reduced Production	Work	Total
Skilled Mechanics	.50	7.50	10.00	20.00	10.00	48.00
Machine Operators	.50	20.00	10.00	33.00	10.00	73.50
Unskilled Labor & Helpers	.50	2.00	1.00	5.00	—	8.50

Certainly many managers have no idea of such cost, and the above figures are considered very conservative.

The most important remedy, that the writer can think of for this state of affairs, can be summed up as follows,

1. Improved methods of hiring and firing men. If a man is not satisfied with his present position, offer to transfer him to another branch or department, rather than let him leave the firm

2. Offering better wages to remain in the firm's employ.

3. A human interest in the employee, endeavoring to secure his interests and make him contented.

4. That foremen while maintaining discipline, are not unduly officious such as to prevent a growth of interest and friendly feeling.

5. The best possible working conditions, such as the eight hour day, etc.

It has already been demonstrated and proved that remedies such as are here outlined are helpful in reducing the labor turn over, and if superintendents were to have the cost of hiring each new employee charged to their respective departments, they would probably be more careful in their selecting of men. Many a director's meeting would be given fod for thought, if besdes all the statistics and miscellaneous information which is supplied to the board meetings they were to have placed before them their rate of labor turnover and the cost thereof.

PREFERRED STOCK FOR RIORDON BONDHOLDERS

It is reported from Montreal that the reorganization managers of the Riordon Company, Limited, have made the following arrangement with the committee representing the first mortgage bondholders, which is subject to the approval of the first mortgage bondholders by December 6.

Under the proposed plan of reorganization, the first mortgage bondholders were to be paid something over $1,500,000 in cash for their past-due interest and interest up to June 1, 1924, on their bonds. The committee, on behalf of the first mortgage bondholders, have now agreed to accept second preferred stock in lieu of the cash. This will result in a saving of $1,500,000 odd in cash to the new company and increase their estimated working capital to $6,000,000.

It is fully expected that the plan will be declared effective as soon as the approval to the above adjustment is received from the first mortgage bondholders.

The Company's mill are working at capacity, it is said, and makinig a profit.

PULP & PAPER EXPORTS IN OCTOBER

According to the report issued by the Canadian Pulp and Paper Association the total value of the exports of pulp and paper in October was $12,289,952, an increase of $574,083 over the total for September and $1,884,519 over October 1922.

Details for the various grades of pulp and paper are given below:

	October 1923 cwts	October 1923 Value	October 1922 cwts	October 1922 Value
PAPER:				
Newsprint	2,014,438	$7,505,041	1,631,042	$5,811,954
Book Paper	4,307	34.415	6.983	49,035
Other Paper & Mnfrs.		632,029		607,977
		$8,171,485		$6,468,966
PULP:				
Sulphate	277,413	$ 903,974	281,777	$ 875,876
Sulphite Blchd.	216,685	871,873	361,487	1,432,687
" Unbleached	386,750	1,061,432	368,215	432,687
Mechanical	699,836	1,281,188	528,705	742,303
	$8,171,485	$4,118,467	1,540,194	$3,936,467

The distribution of these exports in October was as follows:

	Paper	Pulp	Total
To:			
U. S. A.	$7,491,691	$3,526,828	$11,078,519
U. Kingdom	143,129	351,711	494.840
All Others	536,665	179,928	716,593
	$8,171,485	$4,118,467	$12,289,952

Pulpwood exports in October amounted to 102,138 cords valued at $1,078,707, this was a decline from the previous month when the amount exported was 112,366 cords valued at $1,172,814. There has been a large increase in pulpwood exports for this year compared with the last two or three years. In the first ten months of this year there were exported 1,260,871 cords compared with 860,936 cords in the same months last year.

For the twelve months ending October 31st, 1923, there has been a considerable increase in the exports of pulp and paper over the figures for the previous twelve months. A glance at the table given below shows that this increase has taken place in practically every grade of pulp and paper. In the case of sulphate pulp, while the actual quantity exported has been slightly less the value was greater, denoting better prices. The values for Total Pulp and Total Paper are well above the totals for the previous twelve months.

Details for the principal grades are as follows:

	12 Mos. to Oct 31-1923 Tons	12 Mos. to Oct 31-1923 Value	12 Mos. to Oct 31-1923 Tons	12 Mos. to Oct 31-1923 Value
Newsprint	1,119,981	$83,644,006	919,192	$66,549,354
Book Paper (cwts)	46,778	341,772	29,019	211,332
Bond & Writing	22,062	233,600	12,125	125,903
Kraft Wrapping	19,972	2,972,090	17.304	2,623,371
Mechanical Pulp	346,290	$11,498,029	324,799	$ 9,593,181
Sulphite Blchd.	156.263	13.489.992	144.828	11,733.152
do Unbleached	237.518	12.605,676	205.321	10.682,751
Sulphate	147,201	9,568,028	149,166	9,133,797
Total Paper		$91,446,279		$72,822,828
Total Pulp		47,161,725		41,142,881

NEW BRUNSWICK NEWS

H. G. Acres, a consulting engineer in the employ of the Ontario Hydro Commission, has been engaged by the New Brunswnck Government to decide whether or not the development by he Government of the hydro electric possibilities at Grand Falls is feasible. Then the water power rights were taken from the International Paper Company it was announced that operations would start without delay. That was last spring. But now there exists the feeling that the development may never be started by the Government yet. The reason given for taking the rights from paper company was "inaction."

Prevailing wages being offered for cutting pulpwood in New Brunswick range from $50 to $55 per month and board. One company has brought men from Nova Scotia. Owing to a campaign being waged by labor agents of the Canadian Pacific Railway to secure men for construction work in Ontario labor agents of pulpwood operators and pulp and paper companies are finding men scarce. It is expected that when more men have returned to the east from the harvest fields of western Canada, the situation will have been relieved to some extent. Curtailment of operations is necessary at present owing to the lack of workers for the woods operations. Wages may go higher before Christmas, in the opinion of some of the officials of pulp and paper enterprises, who wish to cut on their holdings.

Woodlands Section

FORESTRY AS A TRAINING FOR CITIZENSHIP

Syracuse, N. Y., November 7. That boys "ought to be kept in a barrel and fed through the bung hole until twenty one years old," was denied by R. S. Kellogg, Secretary of the New Print Service Bureau who spoke today at the New York State College of Forestry, Syracuse University on "Forestry as a Training For Citizenship." Mr Kellogg said that the quarter of a century of forest schools in America had shown the liberalizing effect of taking boys into the open and bringing them in close contact in a scientific way with nature. He said that those who had remained in the profession, as well as the foresters who have gone outside of it, generally had made good, and one of the secrets of their success was in keeping close to the dirt which has a tendency to free the mind from illusions. The forester must learn Nature's laws and act in accordance therewith.

Mr. Kellogg declared that there was no easy road to success in forestry. Work consists in moving against resistance; hard conditions breed strong characters and weaklings cannot follow the blazed trail, said Mr. Kellogg. Nature cannot be cheated and the forester must have the three qualities of good citizenship laid down by President Roosevelt,—honesty, courage, common sense. He cannot cheat Nature. He must have the courage to tackle new problems and the common sense to adjust class room theory to the infinite variety of nature. Character, capacity and capital, together with hard work with both hands and head are essential to business success.

Where Science is Leading

Mr. Kellogg said that science is remaking the world, but it is not known yet whether it will carry forward or destroy civilization. He said there is a constant war between the constructive and destructive forces within human society with many other forms of life warring against mankind. The speaker asserted that if man is the final flower of organic evolution, it will be because he finally learns how to get along with his fellows. There is supreme need in the world for men of engineering training to find the facts before acting, for men of such ability who can take the lead in public affairs. The half-baked theorist who turns clever phrases is one of the greatest public menaces.

Mr. Kellogg said that it was unfortunate that thousands of tons of white paper and millions of good spruce trees are yearly employed in spreading mis-information, prejudice and scandal. There is little basis for controversy when all the facts are known on any subject. We are only beginning seriously to consider the fundamental problem of human relations, of how men should live and work together, of how they should conduct themselves, if the complex that we call modern civilization is to endure. There is no substitute for the old fashioned virtues of honesty, thoroughness and willingness to work, no short cuts to wealth and happiness that are substantial.

A man has the right to work for whomever he chooses and to hire whomever he chooses. Employees and employers have a right to organize for the promotion of their respective interests, but neither has the right to use his power to injury of the public. The closed shop union or non-union is ethically wrong, and the flat union scale economically unsound. The only just payment for labor is based upon quantity and quality of product.

Men Not Created Equal

There is no such thing as men being created equal except in the spread-eagle speech of the Fourth of July orator. The inalienable right is that of opportunity. Never will there be equality of accomplishment and reward, socialistic theory notwithstanding . Sound progress will not come from crusades inspired by ignorance and fanaticism. Bolshevism and Ku Kluxism are present examples of "wolf trees" in the social forest with which the world has always been cursed. The forester sanely favors the useful species and remove those which hinder the growth of their betters.

The scientific spirit keeps one close to the facts. We are not called upon to construct a theory of the universe upon every well-attested fact. Many factors are involved in every result. Evolution teaches that progress is gradual. A "better" is progress towards a "best." Sudden, radical changes are not to be expected because the future has its roots in the present. The forester is fortunate in his training in the scientific spirit, in his understanding contacts with nature, in the constant necessity for keeping his feet on the ground, and he is no credit to the profession if he is not a better-than average citizen.

PULPWOOD EXPORTS DOWN IN OCTOBER

Pulpwood to the value of $1,078,000 was exported to the United States from Canada in October, according to a report prepared by the Dominion Bureau of Statistics. This is a decrease both in quantity and value over September figures, which show that $1,172,000 worth of pulpwood was shipped to the States, but it shows a great increase over figures for October, 1922, when only $992,000 was realized from this source. In the report it is shown that the exportation of pulpwood has jumped tremendously in the twelve months which ended with October, as compared with the preceding corresponding period. Figures for these periods are:

1,412,000 cords valued at $13,657,000 in the year which ended with October, as against 956,791 and a total value of $9,967,000 in the twelve months ending with October of 1922.

In October $4,118,000 worth of wood pulp was exported from Canada, of which $3,586,000 worth went to the United States; $351,000 worth to the United Kingdom and $179,000 worth to other countries. The total value of woodpulp exported during the year which closed with October was $47,155,000, as against $41,132,000 for the preceding corresponding period.

During the twelve-month period under review, $3,033,000 worth of paper board was exported from Canada, as compared with $2,327,000 in the preceding twelve months. It is shown that the total value of all kinds of paper products exported from Canada during the month was $8,171,000, as compared with $6,468,000 in October of 1922. The total value for the twelve months is shown to be $91,446,000, as against $72,822,000 in the year which ended with October, 1922.

NEW YORK FOREST OWNERS ALARMED

Carthage, N. Y., Nov. 17. "If we are to regard our forests from the economic and not from the sentimental standpoint, we must consider such problems as the effect of forest land taxation on the grower of timber," said Dr. Hugh P. Baker, Executive Secretary of the American Paper and Pulp Association, before the convention of the American Paper Mill Superintendents' Association, this evening.

"If we can afford the luxury in this state of allowing our forest lands to remain idle, well and good," he added, "but when we consider the growing cost of government, we can hardly afford to allow eight to ten million acres of land to remain practically idle.

"The general property taxes in New York levied by local governments, have increased from $214,000,000 in 1912 to $428,000,000 in 1922. State taxes have risen in even a higher proportion, from $51,000,000 for the year ending September 30, 1913 to $116,000,000 for the year ending June 30, 1922. And State expenditures have risen from 50 to 130 million in the same time.

"The growth in the amount of real property exempt from taxation has risen from $581,000,000 in 1893 to $2,400,000,000 in 1914, and to $3,285,000,000 in 1921.

"The taxation of timber, under present methods is equivalent to taxing a crop of wheat or corn twice a week during the entire growing period. The present tax laws have forced timber owners to cut their forests to get the money to pay their taxes, when the tax laws should be such as to encourage them to hold their trees, instead of forcing them to cut.

"Western states, less progressive in many ways along forestry lines than New York, have gone farther in endeavoring to secure taxation legislation to meet this situation than our own states. Something should be done to meet this situation."

TIMBER TAX LAWS NEEDED

In connection with the sale of blocks of green timber limits in the Matapedia and Gaspe regions and burnt timber, to be disposed of in the Abitibi, Charlevoix and Lake St. John districts on the 30th instant, conditions have been given out by Hon. Honore Mercier, minister of lands and forests. They provide that the cutting permit is for three years, and the rental for the same period is to be paid at the auction. The auction will bear on the stumpage due, which is at present $1.50 per 1,000 feet. The limit holder is supposed to have examined the territory which he secures and have seen whether the fire-killed timber is exploitable, so that there can be no agreement to reimburse the amount paid on account of the fact that the fire-killed timber proved to be unexploitable. At the auction there must be a deposit of $200 per square mile as a guarantee.

PULP MILL FOR CAP ROUGE

It is reported that the St. Regis Pulp and Paper Company, which has important limits on the north shore and at various other points in this province, is contemplating the establishment of a pulp mill at Cap Rouge, Que. The cost of the mill, it is said, will reach over $4,000,000, and indicates that over six hundred men will be engaged in its operations if the project is carried out.

WISCONSIN FOREST PROTECTIVE ASSOCIATION PERFECTS ORGANIZATION

The permanent organization of the Wisconsin Forest Protective Association, formed at Wausau, Wis., Oct. 23, is being aggressively pushed, both by the Wisconsin papermill men, and by the American Paper and Pulp Association, which was largely instrumental in getting the Wisconsin timber users together.

A most significant feature of the new organization's program is that it has the entire approval of the leading state officials interested in taxation and forest fire prevention. In all the letters which the president of the new organisation, D. C. Everest is writing to mills not represented at the organization meeting, he mentions the fact that a definite campaign for a state forest policy has the interest of three state officials who were present through the October 23 conference.

In the work of organization, some features of the organizations of fire prevention associations in the Pacific Northwest may be adopted. Secretary McBain is securing from these various associations copies of their articles of organization, because of their long success in organizing districts for the war against forest fires.

Another feature of the Wisconsin program may be the extension of the Badger State movement to other states where there is still pulpwood timber. Wisconsin, noted for its progressiveness, therefore, may take the lead in a new national campaign of the paper industry for the formulation of a state forest program by co-operation between the pulpwood consumers and the state authorities. The paper industry has been a leader nationally in the campaign for adequate state and national forest legislation, but the formation of the Wisconsin Forest Protective Association is an approach to this problem from an entirely new angle.

The following directors have been selected for the new association: Guy Waldo, Flambeau Paper Company, Park Falls, Wis. O. Bache-Wiig, Wausau, Sulphate Fibre Co., Mosinee, Wis.; F. E. Sensenbrenner, Kimberly-Clark Company, Neenah, Wis., and C. L. Cecil, Cornell Wood Products Co., Cornell, Wis. These four, together with president Everest, Vice-President Delbridge and Secretary McBain will form the executive committee of the new organization.

LORD LOVAT REVIEWS CANADA TOUR

The forests of Canada are by no means inexhaustible and it is urgent to protect them against fire and make a beginning with a systematic practice of silviculture, says Lord Lovat, chairman of the Empire Forestry Commission, in a review of its recent session in Canada. He continues: "If the protection and management of Canadian forests could be brought to the degree of excellence already attained in the Swedish forests Canada could continue indefinitely, not only to supply the wants of her own growing population and the imports of the United States, but to provide, as well, for a substantial surplus for export to the remainder of the Empire. It is to be hoped that the resolutions will receive more than favorable consideration by the governments concerned. A break is required from the old attitude of indifference with which the forests have been regarded, and in place of indifference constructive action.

The Forest Problem: A Way Out

The Montreal Paper Club was fortunate on Tuesday in having an address at the regular monthly luncheon from George Carruthers, of the Interlake Tissue Mills, Toronto, and vice-president of the Pulp and Paper Association. He frankly told the paper men that they were using up the Canadian forests much faster than the forests are producing trees, and that unless efficient co-operation for forest conservation measures were organized immediately, there are inevitably bad times ahead for this great Canadian industry. His address made a very strong impression.

There was a good attendance at the luncheon, Mr. A. L. Dawe was in the chair, and introduced the speaker.

Mr. Carruthers mentioned, as the principal problems in the paper industry: materials, management, men and markets.

But by far the greatest of these problems is that of raw materials, and their preservation so that the industry might flourish for all time. The only solution for this, naturally, is forest conservation and consistent reforestation, a subject of daily increasing importance in Canada. Much has been written and said on this subject, but by far the most illuminating brochure was the brief recently prepared by Edward Beck under the auspices of the Canadian Pulp and Paper Association, and submitted to the Royal Commission on Pulp Supplies. The speaker thought it should be studied by every citizen interested in Canada's future.

Mr. Carruthers agreed and cited strong arguments to show that it is practically impossible for private interests to undertake the program of forest conservation and reforestation necessary, but that this is essentially a matter for the Government, although some ill-informed people thought that the people using the wood should replace it. It is also evident that any robust government program would involve large sums of money, until the Canadian people are much better informed than they are today on forest matters and the dangers of carelessness producing destructive forest fires. No government is likely to undertake an extensive work of this kind, involving large expenditure unless insisted on and backed up by intelligent support by an enlightened public.

While much had been done by such men as Barnjum and Black, there is evidently something wrong when the Government this year actually cut down its contribution to work of such proven value as that of the Canadian Forestry Association and is spending far more for a political stop-gap.

Mr. Carruthers suggested the setting up of a committee of the best forestry experts to study the whole question, and then prepare a brief and telling brochure, to be distributed throughout the length and breadth of the land, so that the Canadian people might be made to realize their precarious position in relation to their forests. The people do not realize their dependence on the forest, nor understand that more wood is being cut today by the wood using industries than is being produced by the forest areas, which is a proven fact. It is also true that three times more trees, to be ultra conservative, are annually destroyed by fire and pests than by industry a fact also not generally known.

These facts, he said, must be made widely known unless our forests are to be destroyed and one of Canada's greatest industries imperilled. During certain dangerous periods he advocated a prohibition of taking matches into the forests, just as visitors to coal mines are not permitted to carry matches one is as dangerous at times as the other. Information of this nature should be spread broadcast, and taught in the schools, together with the disasters that come to every country denuded of its forests, such as China, because such a policy would demand the assistance of every citizen.

MR. GEORGE CARRUTHERS

Mr. Caruthers mentioned particularly the value and efficiency of women's work in matters of public welfare.

"There has been great praise," he concluded, "for the man who made two blades of grass grow where one grew before. But that is as nothing to the acclaim awaiting the man who can make two trees grow where none grew before." (Applause.)

A vote of thanks was moved by Edward Beck, who spoke of the very deep interest of the Scandinavian peoples in the matter of forest conservation; they realize that it is the foundation of national industry and prosperity. Edgar Reynolds seconded the motion, with the suggestion that parts of this paper be broadcasted.

PAPER TOWELS IN PLACE OF LINEN

Substitution of paper for linen towels was suggested by Ald. Hushion in a motion he submitted to the Montreal City Council as being desirable in public offices in Montreal in the interest of cleanliness and health. He accordingly moved and it was resolved in order to protect public health, the Executive Committee be requested to consider the advisibility of enacting, by by-law , that individual paper towels shall be used in the lavatories of public buildings, industrial and manufacturing establishments, the use of linen or cotton towels being most dangerous from the point of view of contagion.

TECHNICAL SECTION

REVIEW OF RECENT LITERATURE

ALKALINE PROCESS

F-5 Method of Extracting Cellulose or Paper Pulp From Fibrous Vegetable Materials. W. RAITT. Eng. pat. 195, 005, Aug. 9, 1922. Addition to 171, 482. The fractional digestion process described in the original patent is modified in such a way that it may be carried out in the Sinclair or Roeckner type of digester, in which the raw material is both boiled and washed free from the products of digestion.-A.P.-C.

F-0 Removal of Odor From Sulphate Pulp. G. A. RICHTER assignor to Brown Co. U. S. pat. 1,454,339 May 8, 1923. Sulphate pulp is treated with sufficient oxidizing agent to react with malodorous compounds without materially changing the color of the pulp. A.P.-C.

F-0 Manufacture of Paper Pulp and Apparatus Therefore. A. OLIER. Eng. pat. 193,965, Dec. 1, 1921. Fibrous materials are successively disintegrated, digested with alkaline solutions, washed, bleached, refined, and delivered to a pulp or paper machine, the operation of the apparatus being continuous. The raw material is crushed between rollers, cut in short lengths, freed from dust by a fan, and delivered into a macerating chamber, containing heated liquor, wherein it is further disintegrated by helically arranged knives mounted on a revolving shaft. The material impregnated with liquor falls into a continuous press consisting of a perforated cast iron trunk (to permit the escape of the expressed liquor) in which are arranged two screws of reverse pitch, rotating in reverse directions, and straddling each other. This press forces the material through a tapered tube, normally closed by a flap valve, into the digestion chamber, the compressed pulp in this tube acting as an obturator and preventing free communication between the digester and the macerating apparatus, when the flap valve is opened. The digestion apparatus, through which heated liquor continuously circulates, is preferably a vertical cylindrical chamber, suitably heated, and of such a height that the material during its passage is boiled to the desired degree. The material collecting at the bottom of the digester is removed by a continuous press and passed through a tapered tube closed by a flap valve into a vertical or inclined washing column, working on the counter current principle, and containing as a conveyer two screws having perforated coils, and arranged similarly to those in the continuous press. The washed pulp after further disintegration is passed up a bleaching column exactly similar in design to the washing column, from which it passes through a refiner on to a paper or pulp machine. In another modification the digestion is effected under pressure. An essential feature of the process is that all the chemicals used are recovered and regenerated electrolytically, e.g., the spent digestion and bleach liquors, together with the washing waters, are treated, after recovery of the fibers contained therein, with chlorine gas to precipitate the ligneous and pectic matter. This is removed by filtration or decantation, and the solution of salt electrolysed; part of the caustic soda is used for the digestion process and the remainder is used for the production of sodium hypochlorite solution, while the balance of the chlorine is used to precipitate the lignin, etc., in the spent liquors.-A.P.-C.

A-12 F-0 Key Industry of the South. HENRY W. HOLCOMBE **Paper** 32, No. 10. 13-14 (June 27, 1923). An experimental plant at Hattiesburg, Miss., has successfully treated yellow pine stumps for the extraction of naval stores and treatment of the residue for the manufacture of kraft pulp. A new type of cooker-drum allows the application of steam immediately to every particle of the wood, reducing the time of distillation to one third. A new solvent is used and is entirely recovered. Improved hogging, rolling and crushing methods leave the residue in excellent shape for transformation into paper pulp which, it is expected, can be bleached.-A.P.-C.

F-5 Distribution of Methoxyl in the Products of Cooking Jack Pine by the Soda Process. S. S. AIYAR. **Ind. Eng. Chem.** 15, 714-716 (July 1923). Methoxyl in the pulp falls rapidly during the first two hours of cooking, and then very slowly. The volatile methoxyl content of the liquor attains a maximum in half to one hour from the time of maximum pressure in the digester, and then diminishes being converted into non-volatile compounds. Lignin and methoxyl contents of pulps from cooks of different duration, expressed in per cent of those of the wood, are practically identical, showing all the methoxyl is associated with the lignin in only one way. There is no advantage in cooking for more than two hours at 100 to 110 lb. per sq. in.-A.P.-C.

F-2 Carbon Catalyst From Black Liquor. C. B. JACOBS assignor to E. I. du Pont de Nemours & Co. U. S. pat. 1,462,752. July 24, 1923. A carbon catalyst adapted for use in making phosgene, carbon tetrachloride or other products is prepared by evaporating and calcining soda black liquor. The product thus obtained becomes ignited in air at a temperature below 370° C. (sometimes even at 80° to 150°).-A.P.-C.

F-4 Treatment of Sulphate Black Liquor. G. A. RICHTER and D. H. McMURTRIE, assignors to Brown Co. Can. pat. 232,746, July 17, 1923. The liquor is concentrated, sulphur is added and the mixture is smelted. Sodium carbonate may be added to the molten effluent to compensate for the loss thereof by the reaction of sulphur with sodium carbonate initially in the spent liquor.-A.P.-C.

F-0 H-0 Process for Dissolving the Organic Products Obtained by the Chlorination of Cellulose Materials. A. R. deVAINS. Eng. pat. 198,975. Dec. 19, 1922. Addition to Eng. pat. 189,561. The process described in the original patent is modified by using as a solvent for the organic chlorine compounds either spent alkaline liquors which have been treated with carbon dioxide, sulphur dioxide, or solutions of alkali or alkaline-earth bisulphites and filtered from the precipitated organic matter, or spent liquors of any concentration resulting from the washing of cellulosic material that has been lixiviated with alkalies.-A.P.-C.

F-0 The Probable Reasons for the Strength of Kraft Papers. Papierfabr. (FEST U. AUSLAND HEFT) 21, 60-62 (June 9, 1923). Not only do the resins contribute to the strength of kraft paper, but also the other fatty constituents of the pulp. These substances probably contain unsaturated acids, which at an elevated temperature are oxidized and form polmyerised films in the paper, thus knitting the fibers together. Old trees do not yield these substances to such a degree as young ones. The possibility of utilizing the fresh extract from conifers for sizing paper is suggested.-J.L.P.

F-O The Rinman Process. EMIL HEUSER. **Paperfabr.** 21, 325-330 (July 15, 1923). An address covering the development and use of the Rinman process in Germany. The average yield of by products per ton of pulp are: pure methanol 10 kg., pure acetone 8 kg., methyl ethyl ketone 10 kg., higher ketones 6 kg., light oils 4 kg., and heavy oils 52 kg.-J.L.P.

F-5 Process for the Purification of Pulps. CARL G. SCHWALBE and ERNST BECKER. Ger. pat. 369,606. **Wochbl. Papierfabr.** 54, 2145 (July 28, 1923). Pulps are digested at 100° C., in the presence of alkaline earths.-J.L.P.

F-0 Treating Cellulose Materials. E. L. RINMAN. Swed. pat. 5..171. Mar. 28, 1923. The materials containing cellulose are treated with hot water or hot dilute waste liquor at temperatures below 100° (80 to 90°) before going to the boilers.-C.J.W.

BLEACHING

F-0 H-5 Production of Bleached Cellulose. A. R. deVAINS. Eng. pat. 189,561, Sept. 5, 1921. Liquors which have been previously used for the treatment of cellulosic materials are used as alkaline liquors to dissolve the products obtained by the action of chlorine on lignocellulose or on halfstuff.-A.P.-C.

H-4 Bleaching Liquor Produced from Salt and Water by Means of Low. Voltage Cells. Paper Ind. 5,779,780 (Aug. 1923). The advantages of electrolytic sodium hypochlorite, prepared directly by electrolysis of sodium chloride, are briefly outlined, and a low voltage (4.6 v.) cell for its preparation is described. Under normal conditions a pound of chlorine can be produced from 5.08 lb. of salt and an electrical consumption of 2.5 kw. With salt at $10 a ton and electricity at 0.5 per kw., this would be equivalent to 35% bleaching powder laid down at the mill for $1.15 per 100 lb. -A.P.-C.

H-5 Effect of Concentration in Bleaching Soda Fiber. E. SUTERMEISTER. **Paper Ind.** 5, 760-763 (aug. 1923). From a series of laboratory scale experiments the author concludes that, with soda fiber, increasing the concentration of the stock during bleaching lowers the color of the bleached fiber, but the change is so small that it can be corrected at very slight cost by the addition of a little more bleach. Most of the obtainable savings in time and reduction in shives is gained by raising the concentration to 8%, greater increase having but little effect. The loss on bleaching is so slightly affected by concentration that it can be disregarded.-A.P.-C.

H-5 Bleaching Paper Pulp. R. B. WOLF. U. S. pat. 1,454,610, May 8, 1923. Paper pulp is lifted to the top of a bleaching tank (through which it subsequently descends) by a conveyor within a central vertical tube which is made narrower at the bottom than at the top to prevent wedging of the descending pulp between the conveyor tube and the tank wall.-A.P.-C.

H-1 Investigation of the Hypobromite Method for Determining Bleach Requirements of Pulps. T. M. ANDREWS and M. W. BRAY. **Ind. Eng. Chem.** 15, 934-937 (Sept. 1923); **Paper Trade J.** 77, No. 13, 47-50 (Sept. 27, 1923). In Tingle's hypobromite method, in order to avoid errors due to volatilization of bromine the reacting solution should be diluted and should be maintained at a temperature of 23° C., to 28° C. With these precautions the method is of definite value for sulphite pulps provided bleach requirements do not vary too greatly. With soda pulp there is an apparent lack of constancy in the ratio of the chlorine factor to the bleach requirement.-A.P.-C.

H-4 A New Hypochlorite Bleach. P. ANDREN. Fr. pat. 530,706. A mixture of chlorine and air is passed been added a saturated solution of calcium chloride and calciumhypochlorite. This paste may also contain the products of decomposition of calcium hypochlorite as well as the soluble salts present in the caustic lime used The reaction mass is continuously stirred during the chlorination. The resulting paste is filtered and the solid part, which is the active product, is dried in a vacuum at a low temperature. The resulting product is characterized by its stability.-A.P.-C.

H-5 The Bleaching of Ligno-Cellulose. CARL G. SCHWALBE and HERMAN WENZL. **Paper** 32, No. 10, 9-10, 21 (June 27, 1923); No. 11, 5-6, 28 (July 4, 1923). Also **Pulp and Paper** 21, 825 (Aug. 16, 1923); **Paper Trade J.** 77, No. 8, 50 (Aug. 23, 1923.-A.P.-C.

H-5 Comparative Bleaching Experiments with Chlorine Gas and Chloride of lime. .EMIL HEUSER and WERNER NIETHAMMER. **Papierfabr.** (FEST U. AUSLAND HEFT) 21, 52-60 (June 9, 1923). Comparative bleaching experiments were carried out at room temperature on a Ritter-Kellner sulphite pulp, which possessed a copper number of 2.20. Upon bleaching to a standard white, in the usual way with chloride of lime for 6 hours, the chlorine consumption amounted to 3.2%, the copper number increased to 3.13 and the through a suspension of pulp in water for an hour, yield was 96.5%. Chlorine gas was next passed but a full white was not obtained. In this experiment the chlorine consumption varied from 2.5 to 2.9%, independent of the quantity of gas passed through; the maximum copper number was 2.90, and the yield was 97%. A combined chlorine gas-chloride of lime bleach gave the best results. After treating the pulp mixture with chlorine gas, which amounted to 62 to 72% of the total requirement, it was washed with water or 1% sodium hydroxide solution. To obtain the same degree of whiteness , as by a single bleaching process, only about 50% of the chlorine was required and the time was shortened to 80 min.; the copper number was lower, 1.9; and the yield was higher, 97.5 to 98.1%. Washing the pulp with a 1% sodium hydroxide solution gave better results than by using water alone, thereby effecting a percentage chlorine saving from 45 to 54 compared to the usual chloride of lime bleach. J.L.P.

(Continued on page 1154)

PULP AND PAPER NEWS

A. P. Costigane, Secretary Engineer of the Ontario Pulp and Paper Makers' Safety Association, has returned to Toronto after a week's visit to the Espanola, Sturgeon Falls and Sault Ste. Marie mills of the Spanish River Pulp and Paper Mills, Limited. As a result of his inspection of the plants and conferences with officials and employees, Mr. Costigane is more optimistic than ever as to the future of accident prevention in the company's mills. "The spirit and interest exhibited by the executive officers, superintendents and foremen are bound to have a great influence on the rank and file of the employees," said Mr. Costigane, "and such influence will be reflected in the accident prevention record in the future. Apprenticeship training is a live topic in the mills of the Spanish River Company and is being studied by a separate committee in each mill, all of whom will bring in a report outlining their ideas in a few months' time."

The many friends in the pulp and paper industry of Lieut-Col. Thomas Gibson, Vice-President of the Spanish River Pulp and Paper Mills, Limited, will regret to hear that he has been confined to his bed in Toronto for over two weeks. Although somewhat improved at present writing it is not expected that Col. Gibson will be about for some little time yet.

J. McQueen, representing the Wrenn Paper Company, Middletown, Ont., manufacturers of blotting papers, called on the Toronto paper trade last week.

Work has been commenced on a new concrete dam to replace the old wooden structure at the Sturgeon Falls mill of the Spanish River Pulp and Paper Mills, Limited. The work will be carried on throughout the winter and will not interfere with the operation of the mill.

J. G. Gibson, Toronto, Secretary of the Spanish River Pulp and River Mills, Limited, has returned from a business trip to the Sturgeon Falls plant of the company.

W. H. Sherriff, of the Hodge-Sherriff Paper Company, Limited, MacKinnon Building, Toronto, has returned from a successful business trip through the Canadian West to the Pacific Coast. Mr. Sherriff reports a constantly growing demand for Wayagamack kraft paper throughout the West with a good outlook for future trade, although business conditions generally are somewhat quiet.

A. E. H. Fair, who joined the staff of the Lincoln Paper Mills Company, Limited, Merritton, Ont., over a year ago, has been promoted to be superintendent of the Company's Lybster mill. Mr. Fair graduated from the University of Toronto as a chemical engineer in 1922 and shortly after joined the Lincoln forces and has been following an extension course in Pulp and Paper Making in the Institute of Industrial and Domestic Arts. He has many friends in the paper trade who will congratulate him on his rapid rise in the industry.

W. J. Moon, lithographer, Montreal, called on a number of the paper jobbers in Toronto last week.

O. H. Moore, general manager of Hinde & Dauch, Limited, box board manufacturers, Toronto, has gone on a trip to Mexico where he will attend the Shriners' convention. He was accompanied by Mrs. Moore.

A new record for the month was made in October by the Abitibi Power and Paper Company, the average daily production being 483.6, which is ten tons above the best previous record.

Only an aggressive and sustained policy of regeneration and more intensive fire protection will conserve Ontario's forest wealth, stated Dr. Clifton D. Howe, Dean of the Faculty of Forestry of the University of Toronto in an address to the Ontario Associated Boards of Trade at Hamilton, Ont., last week. Citing how New England, Michigan, Minnesota and Wisconsin had squandered their timber wealth and how Germany, France and England had adopted reforestation only after prodigal policies had taught them a bitter lesson. Dr. Howe said that Ontario if it had any regard for the future, must heed the lessons of history. He said that Ontario, through lack of a progressive timber policy, was paying from $12 to $20 freight charges on every thousand feet of timber it imported from British Columbia and the Southern States, when it had an abundance of the same wood within one hundred miles of Toronto, Hamilton and London. This was the deplorable condition of affairs, all because citizens of Ontario had not taken an active interest in moulding the forest policies of its Government.

Rowland Ford, Jr., of Rowland Ford & Son, roofing felt and building papers, Portneuf, Que., called on the Toronto paper trade last week.

C. De Forest Coots, of the Whiting Paper Company, Holyoke, Mass., was a business visitor in Toronto last week.

Thomas Dunn, of Winnipeg, Man., who handles the Canadian Paper Board product in that city, was a recent business visitor in Toronto.

David Robertson, general manager of the Canadian Paper Board Company, together with his superintendent, Mr. McCook, of Campbellford, were in Toronto on business a few days ago.

Harry L. James, of the Stevens Paper Company, New York, manufacturers of fibre wood and trunk board, called on the Toronto paper trade last week.

The Toronto Typothetae is making arrangements for a dinner dance to be held at the King Edward Hotel on the evening of Dec. 11.

Miss Robena Justice, a popular employee of the Provincial Paper Mills Company, Limited, at Thorold, recently received the congratulations of her many friends on the occasion of her marriage in Thorold.

The Long Price List and other matters were under discussion at a well-attended luncheon meeting of the Toronto Typothetae at the Prince George Hotel on Nov. 20.

The extension to the wood room of the Abitibi Power & Pulp Company at Iroquois Falls, Ont., has been completed. Four new barking drums have been installed and are in operation. The new upper and lower water tanks are also finished. When the eight drum barkers are at work the capacity of the plant will be double what it was. When pressed the barkers will bark as high as 2,400 cords a day.

Great possibilities for the development of the pulp and paper industry were seen by Olat Kjellstrom, one of the leading pulp and paper manufacturers of Sweden, who passed through Toronto recently on his way to the Orient. He visited the main centres of pulp and paper production in Canada and the United States and will spend some time in the Orient investigating the markets there and re-organizing the company's branch offices in Tokio and Yokohama. "You people out here have the best opportunities for establishing a tremendous trade with the Orient, and I have noticed that this is the country where we are going to meet very hard competition," he said.

Plans for the cutting of from 800,000,000 to 1,000,000,000 feet of timber on Vancouver Island which will call for the erection of a new lumber, wood pulp and sulphite mill at Edmonds, have just been completed by H. W. Kent of Portland and B. A. Strawbridge of Seattle, acting in conjunction with other lumber and pulp interests. The timber to be cut lies near Quatsino Sound and is owned by Portland interests, Mr. Kent has announced. The plant at Edmonds will be used mainly for manufacturing finished lumber and, possibly, furniture. The pulp and paper mill will be designed to use waste products from the Edmonds plant and also waste from other lumber mills on Puget Sound. Four companies are now being organized for the plan of exploitation. The Northwest Securities Company will be holding Company.

The death took place, at Seattle, Wash., on October 26th, of Mr. P. E. Fisher, President of Pacific Coast Pipe Co., Ltd., Vancouver, B.C. Mr. Fisher was born in New York 57 years ago; came West 20 years ago. He founded the Pacific Coast Pipe Co. in Vancouver in 1904, and similar companies in Spokane and Seattle, and later in Portland, Ore. About ten years ago he disposed of his Pipe Plants on the American side and centred his activities on the plant at Vancouver.

A fire destroyed the garage of Mr. Frank McHenry, paper mill superintendent of the Belgo Paper Co., a few days ago. Through a strange coincidence, Mr. McHenry's car was down in a garage at Three Rivers, being repaired. Fire was discovered after much damage had been done to the garage. Although slightly scorched, Mr. McHenry's dwelling was not damaged.

The investment house of Rene T. Leclerc, Inc., has issued to its clients an interesting booklet on Belgo-Canadian Paper Co. It is attractively illustrated with cuts of the Belgo plant, and contains a description of the mills and limits, with tables and charts depicting the growth of the newsprint industry in this country, and the growing deficit of United States production with relation to consumption.

Lumbering operations in the north country are reported to be on a considerably larger scale this year than for some years previous. The larger companies have eleven big camps more than last year already open and the timber output for spring should be double that of this year. One year ago today there were orders on books of Government employment bureaux for 391 men. Today there were 2,258 unfilled orders.

A Canadian firm has begun selling paper machinery in England. The Canadian Ingersoll-Rand Company has orders for 10 bird screens for the new paper mill being built by Lloyds. There are already 14 bird screens in operation in English paper mills, and are reported to be giving perfect satisfaction.

The industry will be glad to know that Mr. T. P. Howard, comptroller of the Howard Smith Paper Mills is reported in a convalescent and much improved condition.

AMERICANS COMBAT EUROPEAN IMPORTS

Abuses of the tariff act as it applies to the paper industry will be followed closely by the American Paper and Pulp Association as a result of the paper import conference held at the Waldorf Astoria Hotel Thursday, Nov. 15. Several hours of discussion by some of the best known leaders in the industry were followed by a request to the American Paper and Pulp Association to take steps to curb the abuses which are becoming so frequent as to constitute a serious menace to the domestic industry.

President Henry W Stokes of the Association, who presided at the import conference announced after the meeting that the executive committee of the Association would be asked to meet at the earliest date possible to carry out the wish of the conference. What steps will be taken can of course not be told at this time, as this will depend entirely upon the action of the committee.

The conference was one of the most important meetings of the year, and was marked by statements from various groups in the industry indicating the extent to which foreign paper is coming into the American market in contravention of the spirit of the tariff act.

In opening the conference President Stokes said that the meeting was called because of the damage being done to the American industry by foreign importations, and he was followed by Dr. Hugh P. Baker, executive secretary of the Association, who reviewed the work already done to combat the dumping and improper entry of foreign papers.

O. M. Porter, assistant secretary followed with an explanation of the procedure under the anti-dumping statute, and other provisions of the tariff act, and Warren B. Bullock, director of the Association's Information Service gave figures showing the increase in sales of foreign papers.

John Matthews, Jr. of Washington, Chief of the Paper Division of the Bureau of Foreign and Domestic Commerce told of the difficulties experienced by government representatives in getting information about foreign imports.

Representatives of the various groups affected were then asked to tell of the difficulties they were experiencing. How high grade tissue was being entered as wrapping paper under a low duty and then sold as tissue was told by the tissue paper men. In greaseproof and similar food protective papers it was told that these special papers were being entered as wrapping, and as in the case of tissue marketed as the high quality paper at prices below domestic costs.

Newsprint and papers for publications were not discussed.

Wrapping paper, however, came in for extensive discussion, because of the manner in which imports have been suspected of coming under the dumping act, or undervaluation. It was pointed out that the quantity of the imports was not particularly large, but that the bankrupt sale prices at which paper from Germany, for instance, was offered had a bad psychological effect on the entire American market.

The sentiment expressed throughout the conference was the need for curbing the abuses which are becoming increasingly prevalent, and there is no doubt that the Association will take steps to combat every effort of European shippers to evade the tariff act.

FILLERS AND COATING MATERIALS

A-11 Georgia Clays for Paper Fillers. W. M. WIEGEL. **Paper Trade J.** 77, No. 6. 51-54 (Aug. 9, 1923). As a result of tests which are described in detail the author concludes that many of the Georgia white clays when properly washed and prepared are fully equal to and in some cases are superior to the imported clays for use in paper.-A.P.-C.

A-11 K-9 Pape Fillers. REYMOND and BONNET. **Papeterie** 45, 681.689 (July 25, 1923): **Paper** 32, 5-8 17 (Sept. 19, 1923). Description of fillers, their function, degree of retention, and uses in various grades of paper.-A.P.-C.

A-11 Deflocculating and Reflocculating Clay and Other Materials. E. G. ACHESON. U. S. pat. 1,456, 112. May 23, 1923. Clay graphite, sulphure, or other solid material susceptible to deflocculation is subjected to attrition with the product from roasted cereals and ammonia or other organic deflocculating agent and the collordal matenal is afterward reflocculated by hydrochloric acid alum or other electrolyte in the presence of residual fine material to obtain a mixture of non-deflocculated and reflocculated particles which may be used as a filler for paper.-A.P.-C.

A-12 K-7 Development and Growth of the Use of Casein. REGINALD W. BIRD. **U. S. Papermaker** 45, 24, 26, 92 (Aug. 1923). Sketch of the development and growth of the use of casein for coating paper in the United States.-A.P.-C.

K-9 Filling Paper Stock. FRIEDRICH REICHARD. Ger. pat. 387,425. **Papierfabr.** 21, 347-348 (July 22, 1923). Water glass and a metallic salt are added to the paper stock in the manner described in Ger. pat. 349,882.-J.L.P.

K?- Process of Coating Paper with Fibers. JOHANN PALMEN. Ger. pat. 372-870. **Wochbl Papierfabr.** 54.-2607 (Sept. 19, 1923). The fibers are distributed on the sheet of paper, which is covered with a liquid adhesive, and then dried on heated cylinders.-J.L.P.

K-23 Bituminous Clay Emulsion for Impregnating Paper. L. KIRSCHBRAUN. U. S. pat. 1,461,445, July 10, 1923. Heated asphalt or other bituminous material is added to colloidal clay and water form an emulsion and a hydrocarbon oil such as topped Mexican petroleum is then added to constitute an additional internal phase of the emulsion.-A.P.-C.

CHLORINE PROCESS

E-0 F-0 Process of Obtaining and Cleaning Cellulose From Wood and Similar Substances. E. SCHMIDT. Eng. pat. 191,357. Feb. 14, 1922. Cellulose may be isolated from fibrous materials such as wood, waste paper, etc., by treating them, either at the ordinary temperature or at 40° to70° C., with chlorine peroxide in presence of liquids such as dilute acetic acid which are capable of dissolving the lignin after it has been attacked by the reagent. The resulting cellulose is subsequently leached with alkali solution. A P. C.

F-0 H-0 The De Vains Process in Paper Making. J. F. CLERE. **Paper Makers' Mo. J.** 61, 328-331 (Aug. 1, 1923); **Paper Mkr. & Brit. Paper Trade J.** 66, 315-317 (Sept. 1, 1923); **World's Paper Trade Rev.** 80, 492-496(Aug. 10, 1923). See **Pulp and Paper** 21, 854 (Aug. 23, 1923).-A.P.-C.

E-0 Manufacture of Pulp. E. SCHMIDT. Eng. pat. 191,357, Feb. 14, 1922. Wood or the like is treated with chlorine dioxide (CiO_2) in solvents such as dilute acetic acid, which dissolve the lignin after it has been transformed by the chlorine dioxide.-A.P.-C.

BEATING

K-7 M-4 Motor Drive and Control For Beaters. O. C. CORDES. **Paper Mill** 47, No. 33,4 (Aug. 18, 1923); **Paper** 32, No. 18 10-1 (Aug. 22, 1923). Brief discussion of the requirements of beater drives showing the advantages of individual motor over line shaft drive and the merits and demerits of silent chain type of drive.-A.P.-C.

K-7 Method of Beating Pulp. A. E. RYBERG and P. C. SCHAANING. Eng. pat. 194,658, Sept. 8, 1922. Compressed air or gas is introduced into the stock before or during its admission to the beater, and may in addition be introduced into the beater itself. The passage of air through the stock enables the fibrous material to be fed into the beater with relatively little water, and thereby effects a considerable saving in power.-A.P.-C.

K-7 Beater. R. J. MARX. Fr. pat. 555,152. In beaters having a spiral shaped trough the stock is carried around by the roll for about three-quarters of its circumference, and is directed into the trough by means of a suitable doctor. According to the invention, the hood over the rolls is continued some distance over the trough, and the latter is built, back of the roll, in such a manner as to deflect the stock and make it take a course almost parallel to the axis of the roll. A spray of water is provided under the doctor which helps to make the stock flow more readily in the trough.-A.P.-C.

SIZING

K-10 Waxing and Sizing Composition for Paper. F. L. PULLEN. U. S. pat. 1,452,389, Apr. 17, 1923. A liquid for sizing paper is formed of lime water, borax, beeswax and linseed oil.-A.P.-C.

K-10 Sizing for Paper. P. W. CODWISE. U. S. pat. 1,449,892, Mar. 27, 1923. Hot water containing previously washed alum-tawed leather is treated with sufficient aluminum sulphate to bring the content of the latter altogether to 10% of the dry solids present, to form a sizing which is of light color.-A.P.-C.

K-10 Sizing for Paper or Cloth. R. KAISER assignor to T. M. Duche & Sons. U. S. pat. 1,448,847, Mar. 20, 1923. A dry sizing solution in water is formed of Karaya gum 98.5% and oxalic acid 1.5%.-A.P.-C.

A-12 Silicate of Soda in the Paper Mill. JAMES G. VAIL. **Paper Trade J.** 77, No. 12, 46-47 (Sept. 20, 1293); **Pulp and Paper** 21, 957-958 (Sept. 27, 1923); Brief review of the use of Paper mill 47, No 39, 16, 18. èSeptember 29, 1923). Waterglass for cementing poud, for rendering clay suspensions more fluid, and for sizing.-A.P.-C.

K-10 Rosin Sizing. G. BELLE. **Papeterie** 45, 366-370, 481-484, 522-529 (Apr. 25, May 25, June 10, 1923). A review covering properties of rosin from the standpoint of sizing, preparation of the size, sizing and the effect of the various ingredients used in the manufacture of paper, and analysis of rosin, resinates and alum.-A.P.-C.

R-5 A-3 Pulp from Grass. E. H. S. BARTER. **Paper Ind.** 5, 481-482 (June 1923). A discussion of the possibilities of development of the industry in Assam, India. H —A.P.-C.

UNITED STATES NOTES

C. Howard Smith, President of the Howard Smith Paper Mills, Limited, Montreal, in a special signed article in the Journal of Commerce, New York, tells of the marvelous growth of the pulp and paper industry in Canada during the last decade. Mr. Smith shows that production last year of newsprint in the manufacture of which the greatest advance has been made, was triple the pre-war production figure. He points out that this rapid development has been due principally to the fact that Canada has vast natural resources of forests and water power. A still greater development which is anticipated in this direction will ultimately result in Canada taking her place as the leading newsprint producer of the world. From a country that produced comparatively small quantities of pulp and paper and exported very little, wrote Mr. Smith, Canada has become one of the leading countries in this industry with a total production second only to that of the United States.

Assistant Secretary of the Treasury Moss has advised the Collector of Customs at Detroit that the proper rate of duty on woollen paper machine endless felts is 7 1-2 cents a pound. The department, he said, concurs in the practice at the Port of New York in assessing the duty on this merchandise as woollen rags under Paragraph 1105 of the Tariff Act.

An advisory committee of leading men of the American paper and pulp industry is being formed by Secretary of Agriculture Wallace to co-operate with his department in its forestry program for the supply and use of pulp wood. Dr. Hugh P. Baker has been active in the formation of the committee. He has had conferences with Chief Forester Greeley and E. H. Clapp, Director of Research for the Forest Srvice. Twenty prominent paper manufacturers have been extended invitations to serve on the committee.

The International Paper Company is making contracts for delivery of newsprint for the first half of 1924 at $75 a ton, the price that prevailed throughout 1923.

John Davey, who died recently at his home in Ohio following a brief illness, will be remembered as the friend of the forest and the man who brought the art of tree surgery to America. With only the fundamentals of education, Davey, as a young man trained in the arts of horticulture and arboriculture, came to America in 1873. He had been brought up in the gardens and parks of Sommersetshire as a child, and his early grown-up years had been spent in close application to his profession at Torquay. It was John Davey who introduced tree culture and tree surgery in the United States. He has handed the art down to his son, Congressman Martin Davey, whose activities in behalf of better forests, better parks and healthier city trees have been the most valuable accomplishment of his public life.

The Salvation Army's new social service center in New York City, which, according to officers of the Army, was built from funds raised by the sale of waste paper, was opened last week. The institution will be known as Industrial Home No. 1 and men who are seeking employment will be put to work sorting waste paper and repairing discarded household goods contributed to the organization. There are two other places of the sort now in operation in the city. This trading of the Salvation Army in waste paper is under attack by waste paper dealers. Charles McBride, treasurer of the Wilson Stock Paper Company of West 19th Street, New York, representing the Waste Paper Merchants' Association, has made application to the State Attorney General's office to dissolve the Salvation Army on the ground that it is engaged illegally in the waste paper trade. This step has been taken because there is no other means of eliminating its alleged illegal competition. Answering the charge, Col. E. J. Parker, head of the Social Service Department of the Salvation Army for more than twenty-five years, asserts that his organization never has made a profit in the waste paper business. He said that the work provides employment for men "down but not out." George Coggill, of counsel for the Salvation Army, denied any violation of the law and said his client has a right under its charter to bid in the open market for waste paper.

The New York State Industrial Commission's survey of the factory employment situation in October shows gains in many directions, the total improvement since August being about 2 per cent, but there was a further slowing up in the paper mills both because of low water and because of a lessened demand for paper. Among the important increases was that in the chemical and allied industries. The firms making industrial chemicals added more workers after gains in September.

The Merchants' Association of New York City has given its support to the Forestry Referendum of the Chamber of Commerce of the United States, which outlines a national forestry policy designed to preserve the forests which remain and to increase reforestation throughout the United States. The Association decided unanimously in favor of the eight proposals formulated by the National Chamber's Committee on Forestry Policy, which are now being submitted as a referendum to its constituent member organizations. The main feature of the plan proposed by the Committee is the replanting of waste land from which the forests have been cut. It finds that there are in the United States 465,000,000 acres of such land. Much of his land is in the hands of private owners. The Committee believes that this should be acquired by local, State or National Governments as rapidly as possible for reforestation purposes The Committe also found that approximately 65 per cent, or 219,000,000 acres of privately owned forest land in the United States is without fire protection.

REAL AND SPUN SILK YARNS

These yarns are only used for the making of high-class knitted goods on fine gauge machines or as a component part of mixtures. The system of knitting goods and fabrics from silk yarns in the gum, a though extensively practised in America, does not seem to have been taken up seriously in this country, although, from the knitting point of view, the yarn is ideal. Considerable amounts of both real and spun silk are used on the Milanese and Atlas warp knitting machines for the manufacture of fabrics or cut hosiery, underwear and evening wear.

The Markets

CANADIAN TRADE CONDITIONS

Montreal Market Report

PULPWOOD This market is yet uncertain. whilst some sales have been effected at better prices than could be got at this time last year owing to the undoubted scarcity of pulpwood in the producing areas in Canada, and also due to the fact that labor is scarce as well as costly, yet American buyers of pulpwood are not eager to purchase; this hesitation on the part of such buyers is due to the impossibility of the American mills to run anywhere like full capacity which is owing to the lowness of water in the rivers; in most cases mills are deprived of 25% of their power and we even hear of one case where the capacity has been reduced 75%, or in other words two grinders being employed instead of eight grinders.—In such cases pulpwood is piling up at the mills and consequently orders to shop are being cancelled—.However, should heavy rains set in this month this will materially alter the position and normal buying conditions should be resumed—meantime prices run about $20.50 per cord rough and $23 per cord for rossed on Watertown, N. Y. basis

PULP and PAPER. The market keeps an even tone and prices show little change—Groundwood is quoted at $40 to $42, bleached sulphite $80 to $82. newsprint $75 and kraft paper $160.

Ontario Market News

A distinct improvement in the wrapping paper, kraft and paper bag trade, increasing demand for book papers and the acceptance of contracts for newsprint at the unchanged figure of $75 by newsprint mills are features of the Ontario paper trade this week. It was stated by newsprint mills that no reduced price for the product was anticipated and that some of them were booking contracts for the first quarter of next year at the current rate. It had already been announced that the International Paper Company had been accepting contracts on this basis. In regard to the wrapping paper trade both mills and jobbers report a more active market although the demand has not yet reached normal proportions. Book paper mills are running full and are gradually booking fair tonnages ahead, while manufacturers of tissues, toilets and crepe specialties report a steady business with what will result in a good Christmas volume of trade. In other paper lines, however, business is dragging somewhat. The board mills, for instance, are running light and in one or two instances manufacturing operations have ceased, while advantage is being taken of the lull in business to overhaul plants. Paper box manufacturers generally are deploring the small volume of Christmas business and although all the plants are running it is difficult in some instances to secure sufficient orders to keep the wheels turning. This condition has reacted against the board mills which are the box makers' source of supply in the way of board. In the manufactured stationery line and envelopes, business is none too brisk and bond and ledger mills report cautious buying on the part of the distributors. The caution with which the retailer laid in his Christmas supplies of stationery was indicated last week at the warehouse of one of the big Toronto manufacturing stationery houses where the firm were kept busy receiving customers from the province who were seeking to further supplement their stocks for the Christmas trade. Coated paper mills report a fair demand for their product and the plants generally are running full. On the whole there appears to be a better demand for the high grade papers and while for the most part these are being manufactured in Canada there are some grades in the way of high class covers, bristols, etc. that are being imported from Great Britain and the United States, although their volume is light. The head of one of the Toronto houses which handles little but high grade papers told the Pulp and Paper Magazine of Canada last week that only in case where a printer was developing a distinctive line of work requiring grade paper than is made in Canada was the paper trade in Ontario going out of the country for their supplies. The home market, he said, was being assiduously cultivated in practically all paper lines with good results all round.

PULP.—While there has been a falling off in the chemical pulp market in the United States the Ontario mills report a fair demand and a fairly active market for all lines. Groundwood pulp continues active although it is stated that no large stocks are changing hands. The prevailing price for groundwood pulp is $44.00, while bleached sulphite is quoted at $90.00; unbleached at $70.00 and news grade at $65.00.

RAG AND PAPER STOCKS.—There is little activity in the rag and paper stock market and dealers report that all grades of waste paper usually sold to the board mills are absolutely dead. All the lower grades of paper are off at least $2 a ton, although there is no change in the various grades for the book mills. The lower grades of rags which go to the roofing mills are falling off in price as the demand diminishes.

NEW YORK MARKETS

New York, November 17.—(Special Correspondence) — The International Paper Company this week announced that it was making contracts for standard newsprint in rolls at $75 per ton or 3.50 cents per pound for delivery over the first half of 1924. This means that there is to be no change in the price of print paper over the first part of next year, and puts at rest all of the rumors going the rounds of the trade to the effect that newsprint prices would be advanced, since other producing companies will undoubtedly follow the lead of the I. P. and continue to quote the same contract basis for 1924.

The announcement that no alteration would be made in contract prices of newsprint was somewhat of a surprise to some members of the trade because it had been expected the leading producing company would mark up quotations at least slightly, anticipations having been for a quarter of a cent per pound rise. However, the contract basis is to be maintained on the same level prevailing throughout the current year.

The fact that newsprint prices are to be left unchanged can be taken to mean that manufacturers are more anxious to keep the print paper market fully stabilized than to secure higher prices for their product. The International Paper Company last spring granted an increase in wages to its mill operatives, but in spite of this, and in spite of the tremendous demand for print paper and the fact that producers could doubtless market a larger tonnage than their present facilities will enable them to manufacture, the contract basis to publishers will remain the same as all during 1923. President Philip T. Dodge, of the I. P., at the time the wage increase was announced early this year stated that the company hoped to offset the higher wages by larger production and greater efficiency and that the company would continue to sell its output at the lowest price possible. There is no question that the company has very materially increased its production since that time, so that the company officials probably figure that the extra cost of manufacture occasioned by the wage rise has been offset.

The paper market as a whole is characterized by fair trade activity. The movement of supplies toward consumers is keeping up at a moderate rate; in fact, it is apparent that consumers are absorbing a heavier tonnage of paper of all grades than normally, yet there is easiness to be noted in some parts of the market due to manufacturers not securing sufficient business to warrant anything like maximum output and thereby leading to very keen competition for orders and easiness in price. Present demand for paper is more or less one-sided. Print paper, building papers, sack paper and certain other descriptions are wanted in abnormally large amounts, while the movement of book, fine, wrapping, tissue and other papers and box boards is merely measuring up to normal or slightly less, and the mills of the country, in their expanded condition, are in need of additional business to keep their machines operating on a really profitable scale.

Production, shipments from mills, and consumption of newsprint are running at record levels. Publishers are freely absorbing all the supply of paper they have on contract and are frequently coming into the open market to augment their purchases somewhat, and there is no doubt that more newsprint could be marketed today if manufacturers were in a position to book larger orders. Moreover the outlook for print paper is unusually bright. The present market activity is not merely seasonal, due to the pre-holiday rush of retail business and the consequent volume of display advertising in the daily press, but there is every indication that advertising campaigns will continue after the turn of the year and that publishers will be called on to use just as much print paper in turning out their issues after January 1 as they have been consuming in the past several months.

Notwithstanding heavy imports of newsprint — from Canada, of course — exports of that commodity continue to grow in volume. In September the United States exported 2,388,067 pounds of newsprint, valued at $112.953, principally to Cuba, Mexico and the Philippines, compared with exports of 1,998,946 pounds for a value of $109,275 in August. Exports for the eight months ended September totalled 21,682,177 pounds, which is a rather small amount when compared with imports into the United States during the same period of 1,720,837,490 pounds.

Secretary of the Treasury Mellon this week announced that he had placed a limit of 16 inches on the width of standard newsprint paper entitled to admission free of duty under the tariff act. In a ruling addressed to the Collector of Customs at New York, the Secretary, in effect, closed the free list to most side runs of newsprint, stating that the term "standard newsprint paper" as used in the tariff law has reference to a paper of a kind, quality and width ordinarily consumed by representative newspapers in printing their regular editions, and as the record in the Treasury Department shows that paper as narrow as 16 inches is used for this purpose it is of the opinion that paper of the kind and quality described in the newsprint regulation, 16 inches or over, is entitled to be admitted free of duty.

The board market has developed additional weakness. Prices have slid off slightly further, plain chip board being quoted at $45 a ton f.o.b. New York, and news board at $47.50 a ton, and some sales at less than these figures having been reported. Demand for board is comparatively light, while the sharp decline in waste paper has reduced in proportion the cost of production, so that manufacturers evidently are passing the saving on to their customers. The present tone of the market would infer that prices have not yet touched bottom for the current movement.

GROUND WOOD. — Ground wood is firmly quoted but on a wide price range. The reason for the breadth of quotations would appear to be the increased attention given by producers to freight rates between grinding and consuming points, reflecting the competition among manufacturers for business. Domestic ground wood of No. 1 prime spruce quality is reported bringing $40 to $43 a ton f.o.b. pulp mills, and in exceptional cases, slightly higher, while Canadian ground wood is reported selling to United States consumers at as low as $37 a ton at shipping points and all the way up to $50 a ton, and even higher, prices depending on the freight and also on the air dry test. Demand for mechanical pulp is said to be good. Newsprint mills are buying freely, and available stocks in the hands of producers and dealers are small — abnormally so — and with the winter near it is felt there should be no recession of note in values.

CHEMICAL PULP. — There are signs of the tone of the chemical pulp market steadying after having ruled weak for quite a lengthy period. With freezing weather not far away, and with the last open water season in Sweden only a matter of days off importers seem less anxious about disposing of pulp they have unsold on hand, and domestic producers are more inclined to hold for the prices asked. However, there has been thus far no actual strengthening of prices. Such improvement as has occurred has been of a sentimental nature but it seems more than likely values will firm in the near future or when available supplies of pulp undergo the reduction customary during the winter.

Sales of foreign strong unbleached sulphite at around 2.90 cents per pound ex dock New York have been reported, of No. 1 Swedish kraft at about 2.75

cents on the dock at this port, of Mitscherlich sulphite at 2.90 and 3 cents ex dock, and of foreign bleached sulphite at around 3.90 cents a pound for the No. 1 grade ex dock. Buyers are still looking for supplies to be had at price concessions, and are placing orders in spotty fashion as their direct needs dictate.

RAGS. — The movement of papermaking rags toward mills is of limited compass yet some grades are characterized by fair demand. Roofing stock is probably in better call than any other class of rags but buyers are intent on getting even these rags within certain price limits. No. 1 roofing is selling at 1.35 cents a pound f.o.b. New York to felt paper mills, and No. 2 packing at 1.25 cents New York. Foreign roofing rags are in relatively less demand than domestic and are quoted at about 1.35 cents a pound ex dock New York for dark cottons and 1.45 cents for linsey garments. Old thirds and blues are wanted in routine quantities at prices of 3 cents, on an average, at dealers' shipping points for No. 1 repacked blues, and around 2.50 cents for miscellaneous blues. Old whites are quotably unchanged but are chiefly inquired for by mills in small lots. New cuttings are in spasmodic demand, with some grades moving in moderate amounts and others almost entirely neglected.

PAPER STOCK. — Further declines have occurred this week in old paper prices. The market is very weak, demand is unusually slow for this time of the year, and values have sunk to levels where packers are not collecting stock in many directions, claiming there is no opportunity of them realizing a profit in handling paper. It is problematical at just how low purchases could be made, but the following prices represent the approximate market level of the different grades: No. 1 hard white shavings, 3.75 cents a pound f.o.b. New York; No. 1 soft white shavings, 3 cents; ledger stock 2 cents; heavy magazines, 1.40 cents; crumpled book stock, 1.15 cents; No. 1 kraft paper, 2.10 cents; No. 1 print manilas, $1 a hundred pounds; folded newspapers, 75 cents, and No. 1 mixed paper, 50 cents. The situation is such that any increase in demand would doubtless make for an immediate firming of prices. Broader demand must arise, however, before price strength can be expected, and there are at the moment no signs of consumers wanting larger amounts of stock.

OLD ROPE AND BAGGING. — Old manila rope is strongly quoted and is fetching prices proportionately higher than any other kind of papermaking material. Sales of domestic No. 1 manila rope at 7 cents a pound f.o.b. New York have been reported, while foreign manila rope has sold to paper mills at close to 6.50 cents ex dock at this port. Dealers say the low level of supplies is the strongest factor in the market, but imports are increasing and this may relieve the situation shortly. Old bagging is quiet and is quoted at around 1.25 cents a pound f.o.b. New York for No. 1 scrap burlap, and 90 cents a hundred pounds for roofing bagging.

The Interstate Commerce Commission has permitted the Washington Publishers' Association to intervene in the case of the Evening Star Newspaper Company against the Canadian Pacific Railroad et al. The case involves rates on all newsprint paper from Canada to Washington.

To give a tenth to God doubles the value of the remaining nine-tenths.

ECONOMIC CONDITIONS IN JAPAN

The Kobe correspondent of "The Manchester Guardian" contributes to that journal an interesting article dealing with the economic consequences of the recent earthquake. Yokohama, he says, is completely gone, but at least one-third of Tokio remains, and that city is still as populous as any in Japan. The opinion is expressed that the Government will remain in Tokio as it is more attractive economically than any other place, while the room for expansion over its ruined area affords scope for growth which could not be found anywhere else. Referring to the financial position of the country, the correspondent says: "It has to be remembered that, notwithstanding a year of unprecedented excess of imports, Japan is still flush of gold, and could raise an internal loan of almost any amount." But just as during a war a nation is forced to spend money lavishly and create thereby an appearance of prosperity, so during the period of reconstruction in Japan a similar tendency is probable. "The chief difficulty is that the profiteering spirit knows no bounds in Japan, partly by nature and partly by the evil habit of mind engendered by the war." The correspondent points out that whatever measures are taken by the Japanese Government in regard to finance, the country must be a very large buyer of supplies required for the purposes of reconstruction, and manufactured goods of various kinds will also be wanted in large quantities. "Prompt shipment, reasonably lengthy credit (which should, however, always have a cast-iron assurance), and unvarying quality will assure business." It is pointed out that a good agency is invaluable; it is better still to have one's own man connected with the agency to devote his whole attention to the business; and it is best of all to have one's own full-fledged branch. Judicious advertising and the making of inquiries through the Overseas Department of Trade and the Consulates may help to bring business, but the best and surest way is to go after it. — Wool Record and Textile World.

STANDARDIZATION MOVEMENT IN AMERICAN INDUSTRY

That practically every American industry is making some effort toward standardization as a means of eliminating waste is shown in a study of the general subject made for the American Trade Association Executives by Dr. Hugh P. Baker, executive Secretary of the American Paper and Pulp Association.

No less than sixty-six associations representing basic industries gave Dr. Baker data as to the extent of standardization in those industries, in replies to his questionnaire, which embraced seven questions. Practically all the associations report some steps toward standardization. Thirty-five associations have committees at work on the subject and 75 per cent of the sixty-six associations have standardized or simplified their products at least in part. The paving brick manufacturers, for instance, have reduced the number of varieties from sixty-six to six, and the Portland Cement Association has achieved a single standard of specifications. The Refractories Association has reduced 100 varieties to 25. The milk dealers have gone a long way forward in standardizing sanitary fittings in milk, ice cream and butter factories. The metal lath manufacturers have reduced 150 styles and finishes to 10 weights with comparatively few finishes.

A wide variety of answers was received to the question "To what extent do you consider it advisable to carry standardization?" "Until business is lost because essentials are not supplied," is a typical answer. The question of originality of design appears in this phase of the question, and again in the replies to the query as to possible harmful results. Seventy-five per cent of the replies see no harmful results possible. At least half of the associations are co operating with government agencies to this end and the last question, as to whether standardization should come through private or governmental efforts was almost unanimously answered in favor of private initiative.

"The accomplishment of waste prevention and of thrift must come," says Dr. Baker in his summary, "as the result of organized effort and this organized effort in industry means the effort of the trade association."

GOVERNMENT ANNUITIES

Increasing interest throughout Canada in the Dominion Government annuities is indicated by a large increase in applications for this form of investment made during the last six months, to the Dominion Annuities Branch of the Department of Labor. During the first six months of the present fiscal year, which starts on April 1, the amount of money invested has been over $567,000, which is an increase of $125,000 in excess of the value of the annuities issued in the same period last year.

The Act establishing government annuities was passed in 1908, but in the first few years of operation the business done was not extensive. In the past 10 years, however, it has grown steadily. Various plans of annuities are operated.

The most popular, judging by the number of applications received, it is stated at the branch, is that which gives a life income to the annuitant for the payment of a stated capital sum. He or she will be paid a sum for life equivalent at or beyond the age of 55 years to about eight per cent. of the amount invested. The rate of interest increases according to the length of the period of survival until at the age of 85 the rate is nearly 27 per cent. The next most popular plan is the deferred annuity system, which as its name implies, becomes effective at the end of a given number of years. The cost depends on the age of the annuitant and the period for which the annuity is to be deferred.

Judged by the number of applications received this year and the increasing number of enquiries to the Department, it is expected that the amount of business written in 1923 will be considerably in excess of last year's total, which represented an investment of over a million dollars.

Two small English boys, staring in a barber shop, and seeing the barber singeing a customer's hair, one said to the other.

"Blimey, Bill, he's lookin' for'em wiv a light."

HANS LAGERLOEF, President and Treasurer
ORVAR HYLIN, Vice President
MAURICE LONDON, Secretary

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DO YOU KNOW that when you start to study, you put yourself into a different class?

DO YOU KNOW that only one man in fifty will be competing with you?

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DO YOU KNOW that the industry has spent $50,000 to help that one man in fifty?

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OF CANADA

A Weekly Magazine Devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades

VOL. XXI. Gardenvale, Que., November 29th, 1923 No. 48

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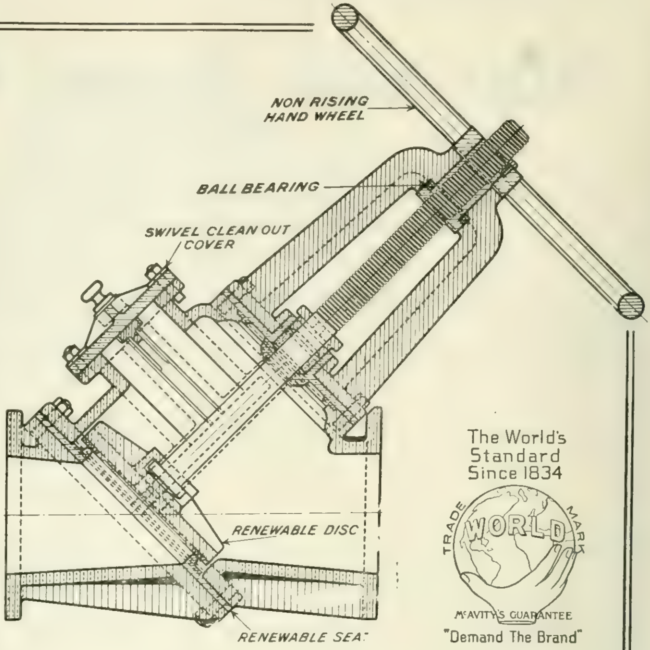

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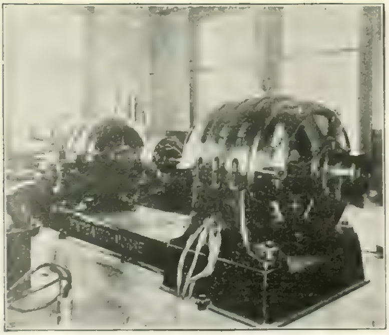

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:-: EDITORIAL :-:

A PAPERMAKER'S TRIBUTE TO FRANKLIN

It would be quite safe to say that no person in modern times was so perfectly well qualified to be called a citizen of the world as Benjamin Franklin. His nobility of character, and his outstanding accomplishments in the fields of statesmanship, diplomacy, military organization, science, industrial success, and philanthropy mark him as one of the really great men of the world. He probably enjoyed a wider personal acquaintance in both Europe and America than any other man of his time.

There have been a number of biographies written of Benjamin Franklin, but we believe it remained for Dill & Collins, papermakers of Philadelphia, to prepare a list of his major accomplishments. This list of forty-nine remarkable contributions to the life of his time, and the welfare of humanity forms the introduction to an unusually fine "Pictorial Life of Benjamin Franklin" which has been issued by this Company in commemoration of the 200th Anniversary of the arrival of Franklin in the city of Philadelphia. Merely to repeat the list would occupy more space than is available here in a review of this excellent book, but a few of the more outstanding accomplishments which will be of interest to pulp and paper makers may be mentioned.

Of course, foremost in the minds of most people when Franklin is mentioned is his discovery that lightning is electricity, thus opening up an entirely new and formerly unsuspected field of science. He followed this with the invention of the lightning rod, which Dr. Charles P. Steinmetz has described as still the best and most reliable protection we have against lightning. Franklin also discovered, before anyone else, the fact that a current of electricity can make a magnet of a piece of steel. He also gave the world the best theory of electricity, which has been confirmed and adopted by the foremost scientists of our own day. He delivered mankind from the nuisance once universal of smoky chimneys, built the first smoke-consuming stove and was a pioneer in the field of ventilation.

Franklin was instrumental in establishing eighteen paper mills in the American colonies. He also edited the best and most successful newspaper in all the colonies, introducing illustrations, a question and answer department, and the newspaper cartoon.

Parton says "Franklin was the first to turn to great account, the engine of advertising, now an indispensable element in modern business." Franklin started the first thrift campaign and his "Maxims of Poor Richard" published in the almanac which he successfully prepared and printed annually for many years, were great encouragements to thrift and industry, and are said to have been more often translated and printed than any other works of an American author.

Franklin made a competence in the printing business in the course of twenty years, and retired from active business at 42 years of age so as to devote the remainder of his life to scientific study and to add "to doing good". Lord Chatham said before Parliament that Franklin was "an honor, not to the English nation only, but to human nature", and Parton says the greatest event in Franklin's life was his deliberate and final choice to dedicate himself to virtue and the public good.

The foregoing is but a brief and incomplete summary of the introduction to the excellent book we have mentioned, which includes an account of his life, two colored portraits, and reproductions of the many pictures and statues of Franklin, but there is one more paragraph from it that deserves special attention. We little realize the enormous influence that reading has on the mind of a boy and on the determination of the youth to follow a definite line in the development of his character. Franklin himself gives credit to the influence of a good book in the following excerpt from a letter written by him in 1784 to Dr. Mather in Boston, the son of Cotton Mather, an eminent divine of that period. This paragraph reads "When I was a boy, I met with a book entitled "Essays to Do Good", which, I think, was written by your father. It had been so little regarded by a former possessor that several leaves of this were torn out, but the remainder gave me such a turn of thinking as to have an influence on my conduct throughout life; for I have always set a greater value on the character of a doer of good than on any other kind of reputation; and if I have been, as you seem to think, a useful citizen, the public owes the advantage of it to that book."

Franklin took a leading part in the convention which adopted the constitution of the United States, although he was then about 80 years of age, and so feeble that he had to be carried to the session in a chair. His magnetic personality, keen wit, kindly humor, and powerful intellect guided the storm-tossed convention over many a shoal and saved it from ultimate shipwreck. At the close of one of his most earnest speeches he concluded: "I have lived, Sir, a long time, and the longer I live, the more convincing proof I see of this truth: that God governs in the affairs of men."

Here we have a man who was inspired to think by the reading of a book, and who, as a result of serious thinking deliberately made up his mind to be "a doer of good." His success in a business way as a printer and publisher, editor and bookseller, business promoter and real estate owner were naught but honorable means in his preparation for his real life work. The story of his life shows that his time was by no means entirely occupied in obtaining a competence but throughout his busy life, he was always engaged in some activity for the public good.

Those who make paper, and those who use it for printing and writing must assuredly be proud of the record of this printer, and must be inspired by the remarkable results of this life of service to do some real thinking and to dedicate themselves to the good of their fellowmen. Dill and Collins are to be thanked and congratulated for putting out in such attractive form, the story of a life that will be an inspiration to all who read it.

AT LAST

At last we shall be able to buy a roll of paper towels as occasion requires from an ordinary store in Montreal. Perhaps we should say an extraordinary store, because for the seven years that we have resided in Canada, periodic requests have been made in vain in a number of Montreal's principal stores for this commodity. We are just advised by the Interlake Tissue Mills that they have made arrangements with Henry Morgan & Sons, Goodwin's Limited and Grindley's Pharmacy (Westmount) to place their roller towels on sale. We mention this matter, not so much as a compliment to the enterprize of the Interlake Tissue Mills, as to take note of a step which we feel should have been taken years ago. It may be that Canada is 10 years or so behind the United States in the individual use of paper, but it remains a fact that there is scarcely a one-horse town in the country to the south of us that does not have at least one store where a person can buy towels, napkins, plates and other useful commodities of paper which are not used in the orthodox way with a pen or pencil or to wrap a bundle.

Perhaps the fact that such representative stores as those mentioned have not heretofore been prevailed upon to carry such articles is due to the fact that the people in the paper industry may, themselves, be just a bit to blame. We feel sure that if every paper man or even just those paper men who read the Pulp and Paper Magazine would mention at their homes that such and such articles are made of paper, and they would like to see them tried out in the homes, we should see a rather marked increase in the consumption of pulp and paper products. The demand from three or four or a dozen patrons of a store for a certain article would very likely be sufficient to induce a merchant to place at least a trial order for the goods. The article could then be tried in the home of the paper men and a casual word dropped here and there would doubtless arouse the interest of friends in the same article, and the sale would be extended, much to the benefit of the whole trade. In the small matter of paper towels, we must admit that our kitchen has been kept supplied with what we consider an absolutely essential article through the kindness of wholesalers who have been willing to break a package or to sell a couple of rolls from the supply made use of on their premises. We have also been permitted on occasion to purchase directly from the mill. There are several concerns in Canada which make excellent paper towels, and we are sure that families where there are boys will thoroughly appreciate their value, to mention but one use, when they consider what a single wipe of a six-year old's wet hands will do to the ordinary linen towel. There are of course a dozen other uses to which the paper towel is put every day.

We have mentioned but one line along which cooperation and mutual support of paper makers for their fellow tradesmen will redound to the benefit of all concerned. The same principle can be carried through to all other lines of products made from pulp and paper. We should all attempt to make use, as far as possible, of such products. To make use of them means in many cases a saving, and we believe in all cases, a distinct advantage in one way or another.

JUST LIKE OURS

Simpkins considered himself a humorist. He sent a selection of his original jokes to the editor of a newspaper and confidently awaited a remittance. His excitement ran high when he received a letter, obviously from the newspaper office.

He opened it with feverish haste. There was no check, however, just a small note, as follows:

" Dear sir: Your jokes received. Some we have seen before, some we have not seen yet."

WHAT CHANGED THE BOY'S LIFE

A Christian man walked along the street a short distance with a boy of his acquaintance. There was time for only a few words, but the man used the moments to say: "Well, Frank, what are you doing with your life? What do you mean to make of yourself?"

Years afterwards the boy, now a noble, purposeful young man, declared to this friend, who, of course, had forgotten the incident: "Those words altered my entire life. I was drifting. I gave no thought to my future, but what you said set me to thinking, and it has made a man of me."

Coloring of Paper *

DuPont de Nemours Co.
By KENNETH KING

Various papers on coloring have been read before this Association during the past four years, the subject matter for the most part being of a general nature with respect to the selection and application of various groups of dyestuffs to different grades of paper. Very little attention has been paid in these papers to the use of individual dyestuffs.

The technical department of a dyestuff company can classify its work into three groups; namely,

> First, research or development work, together with the practical application of this work in the mill.
>
> Second, matching of shades, using the laboratory as an aid for practical matching in the mill.
>
> Third, helping to correct difficulties with respect to the use of dyestuffs in the mills.

In going over the color problems which the various mills have brought to our attention, we find a marked similarity in the difficulties encountered. A great many of these differences are due to the incorrect manipulation of certain individual dyestuffs, on account of characteristic properties they may have.

Rather than discuss the dyestuff question in general, this paper will be devoted to a discussion of the properties of certain dyestuffs or groups of dyestuffs which are used extensively in the paper industry, and which have been the most general causes for trouble.

Basic colors, as a class, should never be dissolved at a temperature above the boil. If live steam is used in dissolving basic colors, there is a chance that the strength of the dyestuff may be reduced as high as 30 per cent. If, upon allowing the dyestuff solution to stand after boiling by the use of live steam, an oily or tarry mass rises to the surface of the solution, it is proof that a certain disassociation has been produced by the steam.

Correct Way to Dissolve Dyestuffs

This trouble can be avoided by dissolving basic dyestuffs in the following manner: Heat the water to a boil, and then sprinkle the dyestuff into this solution with constant stirring. The dyestuff will go into the solution more readily than by shooting live steam into the solution containing the dyestuff, and clotting is avoided in addition to the guarantee that the strength of the dyestuff is not decreased due to the disassociation.

There are three exceptions to the above rule in the dissolving of basic dyestuffs; Auramine, Victoria Blue and Basic Browns should never be dissolved in water over a temperature of 160 deg. F. In fact, in the case of Auramine, the temperature should not exceed 140 deg. F.

Theoretically, approximately 40 parts of water should be used in dissolving one part of basic dyestuff In practice, the best general rule to follow is never to have less than 80 parts of water per part of dyestuff. In other words, approximately one pound per ten gallons.

In many mills using the basic blues and violets for tinting, the dyestuffs are found to crystallize out of solution along the sides of the tank. This difficulty may sometimes be corrected by the addition of acetic acid to the dissolving water before the dyestuff is added, but in case acetic acid will not correct this difficulty, it is a direct sign that the dyestuff is in too concentrated a solution.

Basic dyestuffs should never be allowed to stand in solution for more than 24 hours, because after that length of time hydrolysis takes place to an extent of weakening the solution as high as 20 per cent.

Auramine is hydroscopic in character, and if kept in a very damp place may absorb to as high as 15 per cent. of moisture. For this reason, Auramine, more than any other dyestuff, should be kept in storage where atmospheric conditions are normal, these being the conditions under which it is standardized.

Whenever a complaint is made concerning the standardization of Auramine, our first step is to weigh the contents of the keg or barrel, compare this weight to the gross weight marked on the barrel, and it is usually found that where pound for pound the strength of the dyestuff is supposedly reduced, the gross weight of the barrel has increased in practically the same proportion.

Chrysoidines and basic browns require alum to develop their shade. Due to the heat of the dryers, a sheet of paper colored with Chrysoidine will appear redder as it comes off the machine than it will be five minutes later. This point must be watched in matching a new shade, so as to not act too quickly in changing a formula in case the paper first run over the machine is a trifle red.

The chief difficulty in using any of the basic violets, is that the paper colored with them is decidedly redder under artificial light than in a natural light. For this reason it is harder to hold a shade with Methyl Violet during the night than with any other basic dyestuff. If the mill is equipped with a daylight lamp, a good policy is to use the lamp both during the day, as well as at night. Practically no trouble is ever experienced with any of the other basic dyestuffs, provided the general directions for dissolving are followed.

Acid Sizes

Acid colors differ from basic colors in the fact that they may be dissolved at a boil. Approximately half the water is required to dissolve them as is required by basic dyestuffs, and they are practically unaffected in shade by the heat of the dryers. More trouble is experienced, however, with Metanil Yellow, belonging

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* Presented at N. W. Division of American Pulp and Paper Mill Supts. Ass'n meeting in Appleton, Wis., October 26, 1923.

to this group, than with any other dyestuff used in the paper mills.

Metanil Yellow is very sensitive to excesses of acid or alum, this sensitiveness being accentuated by heat. This dyestuff is the most economical to use for the manufacture of yellow shades of container liner, but unless certain points are closely observed, it is practically impossible to hold a uniform shade on this type of stock. It is common practice in the board mills to use excess of alum as well as to heat up the liner stock to temperatures ranging from 100 deg. to 110 deg. F., which is good practice, to 180 deg. F., which is very poor practice. In having the temperature of the beater excessively over 110 deg. F., not only is the shade of the board decidedly deadened, but the sizing is also decreased, and the strength of the stock reduced. In other words, if enough alum is used for sizing purposes and the temperature of the beater be kept at the correct degree, no trouble with Metanil Yellow should be experienced, but in case the shade of Metanil Yellow is deadened, the superintendent should look further to see the sizing qualities of his board, for the Metanil Yellow acts as an indicator on this point.

Acid colors are the most satisfactory for calender coloring, but for this type of work the most highly concentrated brands obtainable should be employed for the following reason: Reduced brands of acid dyestuffs are diluted with salt, and the salt solution when impregnated into the surface of the sheet of paper will naturally decrease the sizing qualities.

This point is also applicable to the use of concentrated brands of acid or direct dyestuffs in the beater, for here again the salt used in diluting reduced brands has a deteriorating action on the size. Practically no other trouble is experienced with the acid dyestuffs, with the exception of trouble from two sidedness and foaming.

Foaming may be decreased by the use of slight excesses of alum and by decreasing agitation of the stock to the minimum. If such methods are not satisfactory, the introduction of a small amount of Turkey Red Oil or a mixture of linseed oil and ammonia will decrease the foaming. The use of kerosene is to be avoided, because it acts as a solvent for free rosin in the size and will appear on the machine by gumming up the press rolls.

Two sidedness is a question too paramount to discuss in a paper of this type. Our research department is working on this problem and within the next few months we hope to have information which will be of decided advantage to all the mills.

In the coating mills, acid dyestuffs face the problem of fastness to alkali. This problem resolves into a careful selection of just which dye stuffs should be used for each coating formula.

Direct dyestuffs, like acid dyestuffs may be dissolved at a boil, though continued boiling is not a good practice. Alum has the property of dulling all direct dyestuffs, which explains the difference in shade obtained on sized and unsized papers.

On mixed furnishes, trouble is often experienced due to granite fibres appearing in the sheet. This can be avoided either by adding the dyestuff in very cold dilute solution, or by adding it dry to the beater.

As explained in the use of Chrysoidine, certain direct dyestuffs are much redder in shade, due to the action of heat and alum when first they come off the machine, than after the paper has assumed atmospheric conditions. Direct dyestuffs that act in this manner are very seldom recommended for use in the paper mills, because other direct dyestuffs, which do not act this way, can be used to obtain the same shades at approximately the same cost.

THE BEST SIZE FOR A BUSINESS

By WILLIAM R. BASSET, President, Miller, Franklin, Basset & Co., Inc.

Almost every man feels that if his business were only larger his profits would be greater and all would be well. A business man's career is usually a continuous struggle to make greater sales and to make his plant larger.

Undoubtedly the manufacturing of the future will be done by the large enterprises, for only they can achieve the economies of mass production. But it does not follow that it will be done in tremendous plants, centralized in one location. Farsighted business men and engineers realize that the big plant is not always the most economical one either for making or for selling.

There is a best size of manufacturing unit for each industry. The big business will have many such units spread over the country.

If a plant is too small it cannot afford to pay the price demanded by men capable of manufacturing economically, for it cannot utilize all of their ability. It must put up with inferior, cheaper talent.

If on the other hand the plant is too large, executive supervision will not be able to cover it completely. There will be a fringe that will escape proper supervision. That means that something or other will constantly be going wrong.

To determine just how large your plant should be, for best results, is a study that will well repay the effort and time taken.—Fibre and Fabric.

PREMIER PLEASED WITH KENOGAMI

Premier Taschereau returned to Quebec last Sunday from his initial tour of the Kenogami and Chicoutimi districts as the guest of Sir William Price.

The party, which included several ministers, escorted by directors of Price Bros., left here on Thursday evening and visited the Price industries at Kenogami and Chicoutimi Friday and yesterday.

Premier Taschereau expressed himself as enchanted with his trip and stated that the party had seen some wonderful works, especially those at the Grand Discharge.

Premier Taschereau stated that Sir William Price had informed the party that, with the installation of new machinery, the production of paper would be increased from four hundred to nine hundred tons per day.

The work that was being done and had been done by Sir William in that district, he said, was remarkable, and he had been very much impressed at the magnitude of what had been undertaken.

Speaking at a banquet in honor of the visitors on Friday evening in the Price Bros. staff house at Kenogami, Sir William had suggested that the name of the Kenogami dam be, changed to that of Taschereau dam.

A Dynamic Appraisal

by J. W. BRASSINGTON, Consulting Engineer, Port Arthur, Ontario, Canada

When the great majority of the smokeless powder and high explosives plants of the United States were consolidated into what is generally known as the DuPont company and then specifically as the E. I. Dupont de Nemours Co. the amount of work necessitated to weld the component parts into a homogeneous whole was enormous. It was of course essential that reliable Appraisal Companies should be called upon to place a value on the actual property of the various and numerous parts that composed the large organisation. There was however such a great difference in the costs of production in plants of the same general design and containing the same machinery that it became necessary for the proper keeping of the accounts of the Main Office that some approximate area of the actual cost of manufacture per thousand of yield in each plant should be obtained. The necessity for this was accentuated by the fact that some plants with antiquated and poor machinery were actually manufacturing powder or dynamite more cheaply than other plants well equipped with up-to-date manufacturing tools. The writer was employed for three or four years in the High Explosives Operating Division of the Dupont Company and was put in charge of the Smokeless Powder Plants as Chief Engineer of the light, heat and power end of these plants. During the greater part of this time he installed a power cost determination system, which was based on the actual cost of power per thousand of yield of each process of manufacture in all plants, and made from time to time such alterations in the original power costs as were caused by improvements in machinery, methods, application of labor and generation of power as suggested as advisable from the first series of tests made to determine the actual costs.

The general plan followed in the first place was to send a squad of engineers out to each plant in turn. These men took with them almost every conceivable testing instrument; indicators, thermometers, gas analysing sets, draft guages, steam meters, air meters, water meters etc., in all nearly enough to fill a small freight car. Arriving at the plant they camped on the work till finished and ready to report. The first week or so was taken up with preliminary tests to determine the number of gallons of water, cubic feet of compressed air, boiler-horse power-hours of steam, engine-horse-power-hours of steam, K. W. hours of electricity used per thousands of yield in each process of manufacture. Up to and including the beaters the manufacture of smokeless powder is very similar to the manufacture of high grade paper. These tests completed, determinations were made of the efficiency of the pumps and engines. That is we found out how much steam was used in each pump and engine per unit of useful power. developed. We then ran a twenty four hours tests of the whole plant noting:

1. The total number of units of power supplied to the plant from the main power house or source of supply.
2. The total number of thousands of yield that passed through each process of manufacture during the 24 hours of test.
3. The quantity of raw material used per thousand of yield in each process of manufacture during the 24 hour test.
4. The dollar-hours of labor used per thousand of yield in each process of manufacture during the 24 hour test.

All this data obtained, the report was prepared in the following manner.

The items in the second division, namely, the number of thousands of yield that passed through each process of manufacture during the 24 hour test was multiplied by the number of units of power required per thousand of yield in each process respectively as determined by the preliminary tests. The results obtained from these multiplications were summed together and compared with the total number of units supplied from the main power house. The discrepancy between these two totals showed the losses and leaks, also the power required to run the plant when doing no useful work. This figure was checked by running the plant in question on Sunday and finding by process of elimination the power required by machinery running idle and the power required for light and heat. When an air line or a water line required much work on the part of compressor or pump to maintain working pressure it was evidence of leakage which was followed up and checked. When the supply of steam required on any given line was excessive leaks were always found.

The finished report in each case gave in cents and fractions of a cent the cost of production of water, steam, air and electricity in each plant and the cost of engine horse power. In addition the cost of manufacture in each process per thousand of yield was given for Power, Labor, Raw Material and Upkeep;; this latter figure was a measure of the commercial efficiency of the apparatus employed and was a composite figure based on first cost, age, average repairs, etc. Comparison between reports showed astonishing differences in cost of power, labor and material in each process. We found boiler houses with badly balanced grate surface, with respect to area of chimney and heating surface using coal not suited for conditions existing. We found leakages and losses, some due to poor design, others to inadequate methods. We found great losses of raw material that disappeared in manufacture and flowed away in waste waters. We found equally great losses in labor owing to methods of application. Those occurred in plants that appeared to be in first class condition. The engineers in some cases did not expect to be able to prove conditions owing to the good looking appearance of the plant in general, only to find at the end of the tests and the preparation of the report that savings aggregating thousands of dollars a year were possible.

In general these Power and Method reports, first conceived purely as an aid to the Auditing Department, turned out to have a great value as a basis of indicating savings in cost of production and in increasing production. Another curious by-product, so to speak, was that a fairly definite indication as to the most economical rate of manufacture per plant was clearly shown. Comparison between plants showed that while one plant was economical in cooking as shown in the cost per thousand another, while high in cost in this was efficient in beating. In this manner a standard method was adopted in each process based on the best method in that process as shown in the report. No criticisms were allowed of personnel and credit was always given for any suggested improvement to the mill man even if the original idea had to be suggested to him in the first case. In this way the report obtained the maximum of result without in any way disturbing the morale of the mill.

In conclusion it is well to state that one result of these reports was that in each mill more savings were made every year than would have paid for the report in each case many times over.

When the writer was engineer in charge of the Pusey-Jones drawing room he made similar reports for paper mills. These, however, were almost entirely confined to the paper machine itself, while but cursory attention was paid to the mill as a whole. He was preparing to open an office to enter the attractive and useful field these experiences seemed to offer when he was appointed Chief Engineer for the American Writing Paper Company where he was in full charge of such work for twenty-six paper mills. Since then the War intervened, necessitating Government work. Later he had the honor of being associated with the Port Arthur Shipbuilding Company in the work of developing their line of pulp and paper machinery.

"There are plenty of diamonds in the back yard of your plant," as an old friend of mine used to say. All that is needed is to look for them. The writer knows no better way of looking for them than by a Dynamic Survey and Appraisal with its concomitant suggestions and friendly criticisms.

N. S. PULP MILL TO U. S. CONCERN

Papers filed with the Massachusetts State Commissioner of Corporations, Boston, show reveal the consummation of a deal by which Caledonia Mills, 108 Devonshire street, Boston, acquires the property of the Summit Pulp Co., Ltd., known as Harmony Pulp Mills and located on Medway river in the Harmony district of Queens county, Nova Scotia. Caledonia Mills files notice of increase of capital stock, in order to accept a proposal from Amos W. Broughton that he will cause the Harmony Mills property, with 60 acres of land more or less and the buildings on the same, together with all flowage and other rights therewith connected, and also deliver to the Caledonia Mills $10,000 in cash, in return for $104,000 stock, and a five-year mortage for $65,000. The stock increase is voted, and the offer as a whole accepted. The notice of stock issue, as required under the laws of Massachusetts, is signed by Michael O'Leary, president; Thomas F. Brennan, treasurer; both being directors, and John M. Kendricken, a third director.

Michael Faraday discovered the principle of the dynamo electric machine in the last century and without this knowledge, the whole art of electrical engineering could not exist. The value of electric power generated in Canada is $60,000,000 of which one-third is exported.

SHE GAVE HIM AWAY

Christmas Shopper:—"I would like to look at some cheap skates."

Saleslady:—"Wait a second, I'll call the boss."

In two things we should train ourselves—to be slow in taking offence and slower in giving it.

UNSOLVED PROBLEMS IN SULPHITE PULP PRODUCTION

In its essential characteristics the sulphite pulp industry does not differ markedly from others in which recent development has been rapid. In the scant 50 years of its industrial existence the sulphite process has assumed such importance that it may be said to underlie the entire pulp and paper industry of the United States. During this period of development empirical technique has forged ahead relatively much more rapidly than has our knowledge of the fundamental principles governing the process. Although much research has been carried on and more is in progress in our effort to solve the mystery of the constitution of cellulose, for instance, still such investigation has been unable to close the gap between the science and the art of production. Apparently we are fast approaching the point where if we are to continue to build up the technology of production we must have more fundamental knowledge—we must know cellulose and lignin substances better. This, then, must be the major objective of the technical man in the industry, of the chemical engineer who has already contributed largely to the solution of such difficult problems as efficient sulphite acid production and construction of a satisfactory acid-roof digester.

A fresh significance of the magnitude of sulphite pulp operations may be gathered from the fact that 1,200,000 cords of word is used annually for the production of approximately 600,000 tons of air-dry pulp and an even greater tonnage of calcium-lignin-sulphide compounds, the latter item being commonly regarded as a dead loss, since no feasible process exists for its commercial utilization. Of the sulphite acid used in digestion, barely 25 per cent is recoverable as such. The spent sulphite liquor in itself, to say nothing of the lignin content associated with it, represents an immense item of loss, since in American practice from 200 to 350 lb. of sulphur is used per ton of pulp produced. Improved production, from the standpoint of both quantity and quality of pulp, hinges upon the same fundamental knowledge that will make possible the reworking of the sulphite liquor to yield commercially valuable products.

Aside from these more or less indirect losses of byproducts, there is the problem of heat to be considered. It costs roughly $6 to steam a ton of pulp. This steam is drawn quickly from the boiler house, creating a sudden and heavy load and calling for excessive capacity not required at other times. Another serious phase of the problem is that steam coming from the digesters during and after the cook is usually lost in practice. Methods now being developed to overcome this may point the way to the solution of this particular problem, but it is still certain that there is work for the chemical engineer in increasing the heat efficiency of the process.

It should not be gathered from this brief résumé that the industry is unappreciative of these problems which we are pointing out. Although producing a high grade of pulp and that at a profit, it is not content with its present methods. These problems are being earnestly attacked in many quarters—notably in such organizations as the Forest Products Laboratory, where a great work is being carried on in fundamental cellulose research. It is the sort of knowledge made available by this institution that is most needed. If the sulphite industry is to progress there an be no alternative; we must have the facts.—Chemical and Metallurgical Engineering

Sorrows often come to us through the gateway of selfishness; and they depart through the gateway of sacrifice.

The Wonder City at Wembley

In six months from this date the great British Empire Exhibition is due to open to the public at Wembley. The importance of the Exhibition lies in the fact that it is to be British throughout, that it will be on a larger scale than any previous exhibition in this or any other country, and that it is to include characteristic exhibits from all corners of the Empire. It will be, in a very real sense of the words, an Imperial stock taking, a marshalling of the whole of the resources of the greatest Empire the world has ever seen. It has, in fact, been rightly termed the shop-window of the Empire.

The success of the Exhibition is already ensured. The greatest enthusiasm is being shown by the Dominions and Colonies, and interest at home is steadily increasing. Wembley, from being a relatively unimportant suburb of London, has become famous all the world over.

The main objects of the British Empire Exhibition may be summarised as follows:

> To find, in the development and utilisation of the raw materials of the Empire, new sources of Imperial wealth.
>
> To foster inter-Imperial trade and open fresh world markets for Dominion and Home products.
>
> To make the different lands and races of the British Empire better known to each other, and to demonstrate to the people of Britain the illimitable possibilities of the Dominions, Colonies and Dependencies overseas.

A Great Trade Developer

But the Exhibition will do much more even than that. It will attract to the centre of the Empire men and women of all classes and all races, who, whether they be British subjects or not, want to know what the British Empire really is and what it can show the rest of the world. To some extent it will be a gathering of the clans. To a greater extent it will be an event of world-wide interest which no one can afford to ignore.

The great dislocation of trade which followed the end of the war has led to renewed interest in the whole question of Empire development. With continental countries unable to buy on anything like the scale they were accustomed to do before the war, we have been forced to reconsider our whole position. More and more we of the United Kingdom are coming to seek in the Dominions and Colonies new markets to replace those we formerly enjoyed, while the overseas territories of the Empire look to the United Kingdom as a great market for their products. The Exhibition, by showing the vast extent of the natural resources of the Empire, will give a tremendous impetus to the movement. The Union Jack flies over every known variety of climate, and we have available all the mineral and agricultural wealth we require to make the Empire self-supporting.

The British Empire Exhibition dates back to the year 1913. It was first suggested by the late Lord Strathcona, and, but for the war, would already have taken place. Inevitably, however, it was postponed, and it was not till after the Armistice that it again became a practical proposition. The idea was revived in 1919, and the following year the project was formally launched at a Mansion House Meeting convened by the Lord Mayor of London, with the blessing of the Government of the day, and with promises of co-operation from the Dominion Governments.

Much water has flowed under the bridges since that date. Much hard thinking and planning was necessary, and many difficulties had to be overcome to convert the idea into practical shape. To-day at Wemley the result is there for all to see. The Exhibition in skeleton is already in being.

Huge Industrial Palaces

The site of the Exhibition covers an area of 216 acres, and already most of the chief buildings are in an advanced stage of construction. So far the Imperial Stadium, the largest sports arena in the world, is the only one completed, but within the next few weeks the gigantic Palace of Engineering, which is six and a half times the size of Trafalgar Square, and the Palace of Industry, which is but slightly less enormous, will be finished and ready to receive exhibits. The contractors are ahead of scheduled time with their work, and even those Colonies which were late in deciding to take part in the Exhibition will have their pavilions ready for the opening date.

On paper it is impossible to convey an adequate impression of the enormous size of this new city of concrete. The fact that before next April over £10,000,000 will have been spent on preparations for the opening day conveys little to the mind of the average man, accustomed as he has become within the past ten years to talk glibly of hundreds of millions, thousands of millions, and millions of millions. The overseas pavilions alone are to cost in all over £1,000,000, and each and all of the Dominions and Colonies will have its own section, designed and furnished in its own distinctive way.

The British Government is erecting a special pavilion in which the naval and military side of our history will play an important part, and every home industry of any importance will be represented in the Palace of Engineering or the Palace of Industry. The Palace of Engineering will consist of sections devoted to ship-building, marine and mechanical and general engineering, electrical engineering, marine transport, land transport, motor vehicles, etc. In the Palace of Industry, chemicals, cotton, wool, silk, food, boots and shoes, scientific instruments and many other trades and industries will be represented.

Overseas Representation

It is impossible within the space of a single article to give particulars of all the various wonders that Wembley will have to show. Detailed descriptions of the Dominion pavilions will be given in later articles. In the meantime the accompanying table shows for the first time a complete record of the extent to which the Dominions and Colonies are participating in the Exhibition.

It will be seen that the plans of the principal Daughter States of the Empire have been formed on a large scale. allowing ample scope for a display worthy both of the

Participations of the Dominions and Colonies

Dominion or Colony	*Approximate Expenditure.*	*Area of Building.*	*Area of Section.*
INDIA. (Empire of)	£11,000 (voted 1922-23). £156,000 (voted 1923-24).	3 acres. 117,862 sq. ft.	4.9 acres. 245,200 sq. ft.
CANADA.	$1,000,000 (say £200,000).	112,600 sq. ft. 9,600 Canadian National Railway. 9,600 Canadian Pacific.	5¾ acres. 273,000 sq. ft.
AUSTRALIA.	£200,000 (£115,000 by the Commonwealth Government and £85,000 by tne States).	154,480 sq. ft.	5¾ acres. 270,750 sq. ft.
NEW ZEALAND.	£80,000. £16,000 (voted 1922-23).	45,718 sq. ft.	132,400 sq. ft.
UNION OF SOUTH AFRICA.	£80,000. £50,000 already voted by Union Government.	56,550 sq. ft. Cinema 3,000 sq. ft.	216,000 sq. ft.
NEWFOUNDLAND.	£12,000.	6,000 sq. ft.	
BURMA.	£40,000.	16,800 sq. ft.	75,600 sq. ft.
MALAYA.	£50,000.	31,250 sq. ft.	97,500 sq. ft.
SARAWAK.		2,400 sq. ft.	
CEYLON.	£23,000	9,500 sq. ft.	50,250 sq. ft.
MALTA.	£8,000	3,000 sq. ft.	20,025 sq. ft.
PALESTINE.	£6,000.	3,300 sq. ft.	23,000 sq. ft.
CYPRUS.	£3,000	1,500 sq. ft.	
HONG KONG.	£35,000.	18,900 sq. ft.	56,700 sq. ft.
BERMUDA.	£4,000.	2,848 sq. ft.	13,750 sq. ft.
FIJI.	£4,000.	2,000 sq. ft.	
EAST AFRICAN GROUP. Tanyanyika. Sudan. Kenya. Nyasaland. Uganda. Mauritius. Zanzibar. Seychelles.	£25,800.	15,750 sq. ft.	48,000 sq. ft.
WEST AFRICAN GROUP Nigeria. Gold Coast. Sierra Leone.	£100,000.	51,880 sq. ft.	130,255 sq. ft.
WEST INDIES, GROUP, Etc. British Guiana. British Honduras. Falkland Islands. Windward Islands. Leeward Islands. Jamaica. Bahamas. Trinidad. Barbados.	£50,000.	23,125 sq. ft.	49,150 sq. ft.

Exhibition and of the particular Dominion. Several Colonies also will have quite imposing sections—a fact which shows their keen desire to be well represented.

H. R. H. the Prince of Wales, who, a month or two ago, became president of the Exhibition, has been more responsible than anyone else for the interest it has aroused throughout not only the British Empire, but the entire world. In a message to the Empire he used these words: —"We must unite to make the British Empire Exhibition a success worthy of our race."

No one who has seen the preparations at Wembley can doubt that it will be worthy of the Empire.

HUMBER SAWMILL BURNED

It is reported from St. John's, Newfoundland, that fire has destroyed a sawmill operated in connection with the construction work of the Newfoundland Power and Paper Company at their new townsite at Corner Brook, Bay of Islands. This is an unfortunate satback to the new enterprise and will be generally regretted by the industry.

When a man once gets it into his head that he is to live through eternity, then he truly begins to live in time.

British Trade News

(From Our London Correspondent)

London, Nov. 5,1923

As an indication of the success of some of the newsprint mills in the United Kingdom, the well known firm of Thos. Owen & Co., Ltd., Ely paper mill, Cardiff, have declared an interim dividend for the half year ended September 30, at the rate of 10 per cent on the ordinary shares

Another successful paper mill is the Inveresk, owned by the Inveresk Paper Co. (1922), Ltd., the directors of which have declared a dividend of 10 per cent on the ordinary shares. The report states that the results obtained are satisfactory under the present general trade conditions. The gross profit of the firm amounted to £67,518.

Wood Pulp Association

The usual practice prevailing in the yearly program of the Wood Pulp Association was departed from this year. It is the custom to hold the annual meeting in the afternoon and when the business is transacted to gather round the festive board and enjoy the best that one of the London hotels can lay before merchant princes. This year, however, no business meeting was held, simply the dinner and Mr. L. P. Andrews (chairman of the Association), presided over an interested company. Dominant notes in the after-dinner speeches were the poor state of business in the paper industry and the depressed conditions pervading the pulp sellers and buyers. The proceedings were more enthusiastic than 1920, but they still lack the glamour, style, and sumptuousness that pre-war functions were notable for.

Becker Paper Group

A third application has been made in the Chancery Division of the Law Courts in respect of the Becker Paper Group. This time it was for the appointment of a Receiver and Manager for the Irish Paper Mills Ltd., Dublin, which is situated in the domain of the Irish Free State. It was stated that there had been default by the company in not expending £6,456 in redeeming debentures on or before July 1st last. This was admitted and an application was made for Sir Basil Mayhew to be the Receiver and Manager, as in the case of Messrs. Becker and Co., Ltd., and Charles Marsden and Sons.

The judge said it might be conceivable that some difficulty might arise later and he felt uneasy as to whether it would not be rather more desirable there should be an independent Receiver.

Counsel for the National Provincial and Union Bank, Ltd., (who made the application), said that Sir Basil Mayhew was investigating all the matters and it might ultimately result in the reconstruction and arrangement of the company.

The judge said he would on that statement appoint Sir Basil Mayhew.

The Australian Tariff

Nothing has yet leaked out regarding Australia's attitude toward Canada on the tariff question, but I hear indirectly that mention has been made of it at one of the conferences with the Dominion and Colonial Premiers. The British Premier wants free trade all round in the Empire and outside of it a tax on foreign imports. At the dinner of the Wood Pulp Association Col. Lawson made a passing reference to the Australian preference for British paper and pointed out that at the Imperial Conference a decision was arrived at by which some return will be given to Australia for the concession. Of course, he may be speaking in a general way, but so far as I can learn from official sources "no return will be made for the concession given by Australia in respect of paper alone." I hear, however, that the differences between Canada and Australia have been discussed freely and I also feel that Mr Bruce, Premier of Australia, bears no ill-will in respect of Canadian progress.

Since Australia got a preference arranged for British newsprint, the export trade from this side has increased six-fold. Good quality papers have also been sent forward in greater shipment, but not to the same extent as those of newsprint.

Killed in Hunting Field

Canadians and Americans, particularly those of the old school, will regret to hear that Mr. S. G. Hough, a well-known importer of raw materials, was killed while hunting on horseback in Essex. Mr. Hough some few years ago started the Limehouse Paper board Mills which he directed with energy and skill.

What About The Technical Worker?

Here is a hint for Canadians. At the last meeting of the Technical Section in London, Mr. F. Jenkins, one of the beatermen at the John Dickinson Mills in Hertfordshire, gave a most instructive and interesting paper on "beating." The paper roused much discussion as Mr. Jenkins dealt with some points that only a practical man could discover in his everyday work.

This is a hint for Canada to get some of her beatermen out of their usual routine and deal with facts and fancies in their employment—and if necessary give practical hints.

This step of the London Technical Section reminded me that Professor Stone (lecturer in forestry at Oxford University), said at a recent lecture I attended that the help of the practical men was badly required by the scientist, particularly in regard to records, as one depended on the other for help. A scientist or laboratory man may not see things that the practical man can and vice versa.

It is an excellent hint and should be taken advantage of more fully than it is today.

I have frequently commented on the underselling methods adopted by the German and Scandinavian paper sellers in the United Kingdom and tangible evidence has now reached me of the serious results accruing from this kind of foreign competition. Messrs. Bracken and Co., Ltd., Hunslet, have closed their mill and close on 200 work people are idle. The manager has issued the following statement: "In the past two or three years huge quantities of German made paper have been coming into the country and many British firms have been unable to compete with the prices. Fourteen paper firms in this country have had to close down recently owing to the influx of paper from foreign countries. Whether we will reopen or not I cannot say at present." There is no political move about closing the mill at Hunslet and seeing that the British Premier is about to appeal to the country on the question of "Protection" and "Free Trade" in a snap election, I feel that he has an admirable illustration in Messrs. Bracken's case of what this country is putting up with, in his contention for setting up a tariff wall around those industries where foreign products kill the worker and the manufacturer. Another strange element in this foreign competition is the fact that none of the British papermakers will take advantage of the Safe-Guarding Industries Act. They know very well that their industry is badly hit day after day, and they would sooner see the mills close than forsake their pet hobby in politics — besides their interests are too great in other directions in Scandinavia. There is no reason why British and Canadian paper in the British market should not be protected and if the advice of Mr. Stanley Cousins had been carried out 3 years ago the tale today would have been a different one from the mills.

Wall Paper Profits

Although the directors of the Wall Paper Manufacturers' combine have already issued a very full preliminary statement, the annual report, which I have inspected contains several points of interest. I set out below a comparative table showing the result for the past two years:

	1922	1923
Profit on trading	£701,644	£634,868
Deferred Dividends for the year	5%	10%
To reserve account	£100,000	£100,000
Carried forward	114,697	223,089

It may seem surprising that it should have been possible to double the dividend on the deferred capital and increase the sum carried forward in the face of a fall in the trading account profit. This, however, is due to the fact that 12 months age a debt of £107,301 was brought into the accounts and had to be dealt with, whereas, this time a credit balance of £114,697 was brought in. The report states that the company's claim in respect of the German business is still outstanding. As regards the balance sheet, the most noteworthy feature is the increase from £65,087 to £202,235 in the cash resources. The results are excellent for so poor a year in general trade and with such a satisfactory liquid position the combine is well placed to take advantage of any industrial recovery. When the building trade in England and Wales gets into proper — when the Government will allow it — working order and the huge schemes for houses on hand are started, it may safely be predicted that the wall paper concerns will benefit in their turn.

One of the Becker's—"More or Less"

Mr. Justice Tomlin in the Chancery Court has appointed a Receiver and Manager for the North fleet Paper Mills, Ltd., in Kent. The judge enquired if this was one of the Becker group and counsel for the C. W. Realization Company, Ltd., (holders of £15,000 first debentures and one of the defendents) replied "Yes, more or less."

Counsel for the application said that the defendants were the company itself, the National Provincial and Union Bank, and Mr. John Dobson, holders of secured debentures, the bank being also trustees of the trust deed of these debentures. The company was an old established one having been formed in 1883. On May 12, 1886 it issued 4½ per cent debentures of which there were £105,000 worth outstanding at present. The date of the trust deed of the second debentures was Nov. 7, 1920 (particulars appeared in the "Pulp and Paper Magazine" at the time), and was for an issue of £100,000 all of which was outstanding. Mr. Dobson was the holder of £1,000 of these. Counsel read evidence to the effect that on Nov. 7, 1923 the company gave notice that it had passed a resolution that it could not carry on. It had stopped payment, had come to the end of its resources and had no further money for the payment of wages.

There was no opposition to the application by anybody.

Unemployment

The recent closing down of paper mills has had damaging results for a large body of paper mill employees. These unfortunate people are in many cases being kept from starvation by the funds of the Trade Unions and the prospects before them at present are not very rosy. Although the unions are despised by many people, I think great credit is due to them for what they are doing at present for the unfortunate out-of-works — people who are willing to work, but there is none for them in this cold and wet climate of England today.

Norwegian Crisis

I received the following message on Nov. 15: "Information has come to hand that the Employers Association has issued notice of lock-out for laborers in the paper and wood pulp mills from Nov. 15.". I have not heard anything definite since. It would certainly do this market good if Norwegian paper was out of it altogether. But the notice will affect 16,000 men in the pulp and paper mills of Norway who are fighting for better pay and the mill owners say they cannot afford it. Their pay is below that of the Britisher and that is one of the reasons why Scandinavian paper is cheaper in London today. No worker in an English mill could live on the pay that a Norwegian receives. It is this class of people that the British Premier is up against in his efforts to raise a protective wall against foreigners who are outside the Empire.

Pulp Imports

The following are the imports of pulps during October and for the ten months January — October:—

	Oct.-tons.	January-October Tonnage	
		1922	1923
Groundwood (wet)	50,143	444,677	585,610
Groundwood (dry)	1,194	9,733	20,587
Chemical (wet)	1,377	21,467	11,883
Chemical (dry)	44,455	256,893	348,252
Chemical (dry bleached(	2,251	17,850	18,997

The imports of Groundwood from Canada has reached 116,190 tons compared with 106,077 tons for the period January-October in 1922. Scandinavian supplies have also increased considerably; Sweden from 87,423 tons in 1922 to 115,296 tons; Norway from 226,232 tons to 300,558 tons.

Paper Imports & Exports

The balance of trade is on the side of the foreigner and even Canada is cut out of the British market. The totals are as follows:—

	Oct. cwts	January-October cwts.	
		1922	1923
Imports	1,404,877	8,924,561	10,189,838
Exports	500,137	1,847,878	3,492,048

In the case of Germany the imports in some cases have trebled while those from Scandinavia have increased 25 per cent. Canadian newsprint has dropped to 919 tons compared with 6,031 tons shipped during the first 10 months of 1922. Newfoundland supplies have trebled. In the ten months Canada shipped 4,830½ tones of packing and wrappings whereas the Scandinavian were nearly double that amount and Germany's just ten times it.

Woodlands Section

A FEDERAL FOREST PROGRAM *

The Hearings held by the Senate Committee from Coast to Coast clearly demonstrate by overwhelming weight of evidence that any adequate plan for the maintenance of our timber supply must include:

Effective fire prevention on both public and private forest land.

Scientific utilization of forest products.

Forest planting upon large areas of public land.

A substantial proportion of well-distributed forest land in public ownership upon which there may be grown the older classes and larger sizes of timber which we cannot expect in sufficient quantity from private initiative.

It is futile to think of depending upon foreign sources for any considerable future supply of wood products. We must grow more timber at home or alter the entire plan of American life and industry.

It is helpful to state a few truths as to the methods of forestry.

Forestry is not a law compelling the planting of a new tree for every one cut.

Forestry is not a law limiting the cut to certain sizes and kinds of trees.

Forestry is not arbitrary control by any public body over the operations of private enterprise.

Forestry is not fire prevention — though this is everywhere necessary.

Forestry is the application of definite scientific principles to the growing and using of timber crops.

Forestry is and must be practiced by Government upon public property in order to insure some supply of forest products for the people.

Because of the long time investment and comparatively small return thereon, together with hazards of fire, insect, fungus and storm, a considerable area of publicly owned forest will always be needed although public ownership of the entire forest area of any country is neither necessary nor desirable.

The proportion of total forest area in public ownership of some form in the leading European countries in the practice of forestry is 35 per cent. in France, 53 per cent. in Germany and 24 per cent. in Sweden. Private capital engages in the growing of timber and co-operates with the public authorities in so doing in those countries, because capital gets a fair return therefor.

Forestry is and will be practiced by the private owner in the United States when he can see that it will pay him to do so.

Since the larger proportion of the forest area of the United States is likely always to be in private ownership, any adequate forestry program must include measures which will promote permanent timber production on such land.

Any practical solution of the problem of continuous forest production must be based upon the principle of Federal leadership and co-operation with the States and timberland owners.

The ultimate program must include:

1. The determination for each forest region of the essential requirements for the maintenance of forest productivity.
2. Sufficient National appropriations to be expended in co-operation with State and other agencies to make such requirements effective.
3. A survey of forest resources and land classification to determine:
   What timber we have;
   How much we need;
   How much can be grown.
4. Provision for extensive research into problems of timber growth and utilization.
5. Forest planting upon a large scale by both Federal and State agencies.
6. The devising of better methods of forest taxation and their adoption by the States.
7. The continual building up of publicly administered forest through purchase, exchange, transfer from the public domain and the several forms of public reservation until 40 p.c. of the ultimate forest area of the United States is permanently devoted to timber growing or watershed protection under public control.

At present 20 per cent of the forest area of the United States is publicly owned, but the situation is badly unbalanced. From the Rocky Mountains West, 70 per cent is in public ownership and from the Rockies East, but 3 per cent.

The immediate program should include:

1. A Federal appropriation of not less than $1,000,000 yearly for co-operation with the States in fire prevention, the National Government to spend no more for this purpose in any State than the State itself spends therefor, including the expenditures of forest owners required by State law.
2. A Federal appropriation of $5,000,000 yearly for the purchase of forest land upon the watersheds of navigable streams.
3. A Federal appropriation of $1,000,000 yearly for forest research and investigation, including studies in forest taxation.
4. An initial Federal appropriation of $100,000 yearly for forest planting in co-operation with the States and otherwise with provision for increases up to a total of $1,000,000 yearly within 10 years as planting facilities and forest protective measures are improved.
5. A relatively small initial appropriation with reasonable yearly increases for co-operation with the owners of forest land, similar to the

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* Abstract of Statement presented to the United States Senate Select Committee on Reforestation on November 22, 1923, by R. S. Kellogg, Chairman, National Forestry Program Committee.

present appropriations for co-operation with the owners of farm land. The Secretary of Agriculture recommends $50,000 to start this work.

6. Authorization for determination by the Secretary of Agriculture of what lands, owned by the United States and not now embraced in National Forests or National Parks, are valuable chiefly for the production of timber or the protection of watersheds and provision for their ultimate inclusion within the National Forests or such other protection and administration as will promote their best use in the public interest.

None of these items can be rightly charged to the National Expense Account. They are investments in the future and permanent welfare of the country — an insurance upon one of our greatest and most necessary natural resources.

WOODLANDS SECTION BEGINS FORESTRY CALCULATIONS SERVICE

O. M. Porter, secretary of the Woodlands Section of the American Paper and Pulp Association, has announced the inauguration of a consulting forestry service for paper and pulp mills by the Section in line with the Section's policy of "encouraging the practice of forestry on the timberland holdings of the pulp and paper industry." Returns on the timberland investments of the paper industry can be assured only where these lands are adequately protected from fire and so logged as to provide for a second cut or a reasonable resale value. It is to meet this situation that the Woodlands Section is offering the consulting service to members of the American Paper and Pulp Association, along the lines of timberland examination and formulation of management, fire prevention and reforestation plans.

The proper handling of timberlands, says the Woodlands Section announcement, can be assured only by the service of trained, practical foresters. Many companies have not yet realized the necessity of employing foresters in the management of their timberland holdings; others own insufficient lands to warrant the employment of a full-time forester; and others may be contemplating the purchase of timberlands or actual management operations on those lands which they already own. It is for such companies that the new service is offered.

This service will be given at cost, but the Woodlands Section would expect to be reimbursed for actual traveling expenses only, with a reasonable fee for the services of Mr. Porter, who is a technically trained forester.

HAMILTON HERALD SOLD

Negotiations for the sale of the Hamilton Herald newspaper, which have been in progress for the past two or three days, were completed this morning. The property has been purchased by W. F. Herman, proprietor of the Border City Star, of Windsor, Ont., recently proprietor of the Saskatoon Daily Star and the Regina Post.

PULPWOOD EXPORT: A VITAL ISSUE

By FRANK J. D. BARNJUM

I am very glad of the opportunity that is from time to time afforded me by some correspondent, who has little knowledge of what he writes, to further emphasise the alarming situation that is facing Canada with regard to its rapidly diminishing wood supply. Ellwood Wilson, one of Canada's foremost foresters, says that this is not only the most important pending question before the Dominion to-day, but is one for Canada alone to solve.

The figures pertaining to the amount of pulpwood now standing in Canada, as quoted by a correspondent in a recent issue of a Canadian newspaper, are, to say the least, very wide of the facts. The makers of these figures frankly state that they are a mere guess at best. In any event, we in the East are only concerned with the stand of spruce and fir pulpwood in the four provinces of Ontario, Quebec, New Brunswick and Nova Scotia. In this connection, I will quote from this same Dominion Forestry Branch document, referred to by this correspondent, which states that these Eastern Provinces contain 552,210,000 cords of all kinds of softwood, but as only two-thirds of this amount would be merchantable pulpwood, this would be reduced to 368,000,000 cords and deducting 80,000,000 cords for inaccessibility, we get 288,000,000 cords of accessible pulpwood in these provinces. Accepting these figures, which I shall challenge later on, and allowing for an annual cut of $5,000,000 cords and a far greater depletion caused by insects, fungi, fire and wind, the situation is critical indeed. In support of this I need refer only to what has happened along just one line of railway in Canada, the Transcontinental between LaTuque and Cochrane, where, by an actual cruise, it was found that 20,000,000 cords of standing wood were destroyed by fire while the railroad records for the same period show that only 1,000,000 cords of all kinds of wood products were shipped, showing a loss of twenty cords by fire to one cord utilized. This, with the loss of 200,000,000 cords by the spruce budworm in these same Eastern provinces, will enable the people to understand how rapidly we are losing our wooded areas.

The reason I challenge some of the figures that have been published in Government and Conservation Commission reports, which, as I stated before, even the makers say are largely mere guesses, is because some of these, by an actual cut, have proved to be over-optimistic as to the supply.

The exhaustive aerial survey made a year ago by the Ontario Government over the James Bay Watershed is a case in point. This territory has always been considered as a part of our future wood supply, while this survey revealed the fact that the wood resources of that region were a mere myth, as that whole area consists of either burns, muskeg or scrub, with merely narrow strips of wood along streams and in patches too small and remote to make commercial operations possible. As one member of a party who recently flew across that coutry stated, "the only visible resource was duck shooting."

The amount per acre that some of this small pulpwood timber will actually cut out has been alarmingly small, deceiving some of our very best foresters and lumbermen, as evidenced by actual operations in this small northern growth. I can refer to instance after instance where this has occurred. The most recent case that has been brought to my attention was at a hearing in Halifax, when the president of the company holding the "Big Lease" in Victoria and Inverness counties, Cape Breton, publicly stated that the territory covered by this lease contained only three million cords of pulpwood, while in the report of the Conservation Commission, it is stated that this lease contains twelve million cords. This estimate of twelve million cords, which was later corroborated by some of the best foresters and lumbermen of Maine, was made by the late Dr Fernow who was probably the most noted, capable, highly educated and trained forester of his day. As it was also stated by this same witness that there was no budworm on this tract, and that only a matter of one hundred and fifty thousand cords had been cut since this estimate was made, it shows clearly that the amount called for in this report fell short just seventy-five per cent and this is only one instance of several of the same nature that have recently been brought to my attention, proving conclusively that the estimates in this small growth are almost invariably too high.

In their frantic endeavour to fool the Canadian people, some of these American representatives, with their large figures, totally ignore the fact that we have lost two hundred million cords of pulpwood through the ravages of the budworm alone, while our forest fire loss is increasing from year to year, the present season having shown the greatest loss from this cause in Quebec and New Brunswick that has been experienced in the history of these provinces. There is not a water power or water shed in the Dominion that is not already suffering from a lack of forest cover, many rivers having been lower the present season that ever before, and many wells and springs having failed for the first time. This drying up of the earth's surface is accountable for the alarming increase in our forest fires, and this is a phase of the situation that our puny politicians at Ottawa will be forced to recognise.

Judging from the "testimony" given by some American pulpwood dealers at these "hearings," one might be led to believe that with the advent of an embargo at least one-fifth of all the newspapers in the United States would go out of business,—while as a matter of fact, the only change that will be brought about will be the erection of at least sufficient new pulp mills in Canada to make good the deficiency in the unmanufactured wood that is now being exported. In order to provide a market for what actual farmers' or settlers' wood is now leaving the country, not more than six mills of a hundred tons capacity each would have to be built.

No other solution would be open to the American newspapers, whose owners care not whether their pulp or paper is manufactured one side of the line or the other, provided they can only be assured of a sufficient supply. They must have the paper, and if this cannot be obtained through the export of raw wood, then they will be only too glad to take it in pulp or paper.

All this hue and cry by the American pulpwood dealers for the farmers' and settlers' rights is pure bunkum. The farmer and settler will be very appreciably benefited by an embargo, as he will not only have ample home competition for his wood through the advent of, I am afraid, too many new mills, but he will have a home market for his farm produce and labor for himself and family as well.

The Government of Ontario has already received applications for locations for ten new pulp mills, which causes the efficient Minister of Lands and Forests, the Hon. James Lyons, to remark that if all of these requests are granted, he does not know what will become of the pulpwood supply of the province. Several new pulp mills are projected in the provinces of Quebec, New Brunswick and Nova Scotia. If the mere agitation for an embargo has already produced such substantial results, I will leave the people to judge what the announcement of the actual embargo would accomplish for the welfare of Canada. As soon as the embargo goes into force, it will then become immediately necessary to take up the question of a reduction in the cut, better fire protective measures and a real forest conservation program.

With reference to the embargo, it is with much pleasure that I quote what Sir John Willison, as President of the Canadian Reconstruction Association says, as follows—

"We must either manufacture the raw materials of Canada within the country — thus employing labor, rearing new communities, providing local markets for merchants and producers, strengthening the national structure, making the back of Canada strong to bear its accumulating burdens—or the sons of Canada will follow these raw materials out of the country, establish themselves in foreign industrial centres, and, more and more from year to year, the national burden will become heavier and the issue of the great political experiment in which we are engaged become more difficult and uncertain. Every sound economic and natural reason, therefore, demands that the raw materials of Canada shall be manufactured in Canada, and the Canadian people protected in the possession and control of their natural inheritance."

The opinion and corroboration of such outstanding loyal Canadians and high authorities as those whose names I have the honor of referring to below will carry greater weight with the people of Canada than the mere rhetoric of a man engaged in the foreign export of his country's most vital natural resource.

The Right Honorable Robert Laird Borden, Sir Lomer Gouin, Sir William Price, Sir John Willison, J. R. Booth, Dr. G. D. Howe, Edward Beck, G. C. Piché, Ellwood Wilson, Robson Black, and hundreds of others, including the editors of all of Canada's best newspapers, who have given the question serious study.

If the Government at Ottawa does not possess a sufficient sense of propriety to now issue an order disbanding that worse than useless waste of the people's money, the Royal Pulpwood Commission, then the members of this Commission, out of self-respect, should hand in their resignations and decline to any longer continue participating in these farcical proceedings.

BASIC BUSINESS CONDITIONS IN THE PAPER INDUSTRY

New York, Nov. 23. "Basic business conditions are good, and the paper industry should expect to receive its normal share of the business activity," says the monthly review of business by the Paper and Pulp Industry, the bulletin of the American Paper and Pulp Association.

"Despite some uncertainty in the country's business — unjustified as such uncertainty is by basic conditions — the paper industry is not altering its belief that good business is to be the rule for months to come," says this review. "This sentiment expressed during the Fall Business Conference at Chicago seems to be justified by the general improvement in the volume of business since the middle of October. The statistical report of production for September, compiled by the American Paper and Pulp Association, showed an unexpected falling off of production, following an increase in August to above normal for the summer months. It is probable, however, that the October summary will show an increase of production over September."

TECHNICAL SECTION

REVIEW OF RECENT LITERATURE

TREATMENT OF WASTE PAPERS

K-4 Process for De-Inking Waste Papers. A. L. BURLIN. Eng. pat. 198,789. March 10, 1922. The paper, freed from dust, is disintegrated in a breaker or beater fitted with a drum washer and a steam pipe, and treated at a temperature of about 35° C., with a small quantity of soda ash, e.g., 8 lb. per 5 cwt. of paper. After agitation for about 10 min. oxalic acid (about 2 lb.) is added and the beating operation continued until an intimate mixture is obtained . The mass is then allowed to soak for about one quarter of an hour to one hour, or until the desired effect is obtained, and is finally washed. If a pulp of very good color is required, the washed pulp may be subjected to the action of a small quantity of a bleaching agent. In certain cases, particularly when wood pulp is present, the soda ash and oxalic acid may be added together. An alternative method is to treat the pulp, previously disintegrated in a beater, in tanks, preferably steam jacketed and provided with a false bottom. In this case the liquor may be drawn off and used, after addition of a further quantity of chemicals, to treat a fresh charge of paper.-A.P.-C.

K-4 Process for Removing Ink from Printed Papers. P. BOURCET and H. REGNAULT. Eng. pat. 198,854. Apr. 3, 1922. Paper from which printer's ink is to be removed is pulped with 20% of its weight of hot water and 1 to 2% of a mixture containing equal parts of oleic or other liquid fatty acid, and an alkali oleate, or the sodium salt of a sulpho-acid such as sulpho-oleic, sulphoricinoleic, or sulphoresinic acid. This operation, which should continue for about one hour, effects the solution of the oily vehicle of the ink and sets free carbon and other pigments; these are removed by intimately mixing the pulp mass with a quantity (equal to the weight of the paper) of a volatile hydrocarbon such as toluene or xylene. Tepid water is then added, with constant agitation, in sufficient quantity to give a 2% aqueous suspension of cellulose, and the whole passed through a centrifugal filter to separate the cellulose. The volatile hydrocarbon and the pigments it has absorbed are readily recovered by distillation.-A.P.-C.

SULPHITE PROCESS

E-4 Bisulphite Liquor for Cooking Pulp. G. A. RICHTER, assignor to Brown Co., U. S. pat. 1,458,309, June 12, 1923. Raw acid liquor is enriched with sulphur dioxide from recovered blow-pit gas to produce an intermediate acid liquor and a final acid liquor is prepared from this intermediate liquor by enriching it with sulphur dioxide obtained as relief gas from the digester. **U. S. pat. 1,458,310,** specifies producing a sulphite cooking liquor by an absorption system, separating the gases from the hot liquor relieved from the digester, cooling the separated strong gas thus obtained and absorbing sulphur dioxide from it. Free sulphur dioxide is recovered from the remaining hot relief liquor and is passed into the system where the strength of the gas in the system is about the same as that of the recovered gas.-A.P.-C.

E-4 E-5 Sulphite Cooking Process. JOHN D. TOMPKINS. U. S. pat. 1,457,326, June 5, 1923. The top relief line of the digester is connected with the bottom of the digester by a line in which there is a pump for forcing the gas into the digester against the pressure in the digester. It is claimed that during the period of dry gas relief the re-introduction of the gas effects circulation within the digester. A steam line is provided to heat the gas and maintain the temperature in the digester.-A.P.-C.

E-5 Process for Producing Paper Pulp. B. S. SUMMERS. U. S. pat. 1,451,125, Apr. 10, 1923. Wood is cooked in a solution containing a bisulphate together with sodium hydrosulphite ($Na_2S_2O_4$) or zinc or magnesium or other material capable of producing hydrosulphurous acid ($H_2S_2O_4$) which facilitates obtainment of high yields of pulp.-A.P.-C.

E-0 Process for Recovering the Waste Heat of Gases and Vapors in Sulphite Mills. H. CLEMM and H. SCHNEIDER assignors to **Zellstofffabrik Waldhof.** Eng. pat. 178,106, Apr. 1, 1922. Hot gases, e.g., from pyrites furnaces, and steam are brought into contact with fresh sulphite liquor in a heat exchanging apparatus which consists of closed chambers, so that loss of sulphurous acid is avoided. The resulting hot liquor is then used in the usual manner for digesting wood.-A.P.-C.

F-5 The Keebra Process for the Production of Chemical Pulp. Paper Trade J. 77, No. 10, 51 (Sept. 6, 1923). An outline of the neutral or alkaline sulphite process of L. Bradley and E. P. McKeefe. Sen Can. pat. 219,557 of June 13, 1922. **Pulp & Paper** 20, 791 (1922).-A.P.-C.

F-5 Apparatus for Circulating Liquor from a Digester to a Heater. C. TUTSCH. Fr. pat. 25,921; addition to 512,232. The chief patent is very similar to Fr. pat. 533,730 (**Pulp & Paper** 20, 654, 1922). The addition consists in providing for a closed chamber within the body of the digester through which the liquor passes before going to the heater.-A.P.-C.

E-3 Sulphur Consumption in the Manufacture of Sulphite Pulp. W. G. MacNAUGHTON. **Paper Mill** 47, No. 29, 36 (July 21, 1923); **Paper** 32, No. 15, 5, 14 (Aug. 1, 1923); **Pulp & Paper** 21, 780 (Aug. 2, 1923). Brief discussion of the factors affecting sulphur consumption.-A.P.-C.

E-4 Limestone Tower Installation. Paper Trade J. 77, No. 3, 48, (July 19, 1923). A description of the first German Jenseen tower installation built at the Ashaffenburg mill of **A. G. Zellstoff und Papierfabrikation.**-A.P.-C.

E-5 The Cooking of Sulphite Pulp. MARTIN L. GRIFFIN. **Paper Mill** 47, No. 27 4, 8 (July 7, 1923); **Paper** 32, No. 12 7-8, 13 (July 11, 1923). A criticism of modern cooking methods. One of the most essential factors is proper circulation, which is very efficiently obtained in a rotating digester; but this is not practical for large production. The Morterud circulating system consists in withdrawing the liquor from the bottom of the digester passing through a heater, and returning it at the top of the digester. The Tompkins system con special devices reheating the gases as desired, and forcing them into the digester at the bottom. The author considers the latter better than he former and discusses is merits.-A.P.-C.

E-4 Regenerating Sulphurous Acid and Waste Heat from Sulphite Digesters. K. HANGLEITER and A. SCHNEIDER. Can. pat. 232,272, June 26, 1923. The Pressure in the digester is lowered by withdrawing much of the gas which is led into a container; then the rest of the gas is withdrawn through another pipe through which fresh liquor is passing to the container. The heat and sulphur dioxide are absorbed by the fresh liquor.-A.P.-C.

E-4 Cooler for Regulated Liquor and Gases in the Manufacture of Pulp. G. F. SHEVLIN. U. S. pat. 1,457,941, June 5, 1923. The reclaimed liquor and gases are passed into a vessel traversed by a number of tubes, and enclosed in a large tank. Means are provided between the inlet pipe and the tubes to prevent the liquor and gases from coming into direct contact with the tubes upon entering the cooler.-A.P.-C.

E-4 Method of Burning Sulphur. H. S. DAVIS assignor to Texas Gulf Sulphur Co. U. S. pat. 1,456,284, May, 15, 1923. Traces of oil (0.1 to 0.2%) are sufficient to make sulphur non free burning owing to the formation of asphalt like compounds during combustion which spread over the surface of the burning sulphur. This is overcome by mixing with the sulphur such substances as magnesia, asbestos, and certain types of porous brick, and to a lesser degree mangnesium carbonate, infusorial earth, fuller's earth. These materials seem to act as a wick for the melted sulphur the fibrous structure of some of the materials greatly aiding in this section. They are also poor heat conductors and therefore the heat generated in the burning surface is not conducted away rapidly enough to reduce the temperature below the ignition point.. The principle may be conveniently applied to both cascade and rotary burners, by lining the trays of the cascade burner and the drum of the rotary burner with asbestos or magnesia brick.-A.P.-C.

E-5 Sulphite Process. GEO. H. TOMLINSON. Can. pat. 232,488, July 3, 1923. Wood is subjected to the action of a weak bisulphite solution and steam at a temperature below 130° C.: the reagent is withdrawn and the pulp is treated with a stronger bisulphite solution at a temperature below 150° C.-A.P.-C.

E-5 Improvement in the Sulphite Cooking Method. C. S. V. HAWKINGS. **Pulp & Paper** 21, 955-956 (Sept. 27, 1923); **Paper Trade J.** 77, No. 13, 52-56 (Sept. 27, 1923). The following results are given of comparative cooks carried out by the Decker process (Can. pat. 229,288, March 6, 1923; see **Pulp & Paper** 21, 939, Sept. 20, 1923; **Paper Trade J.** 77, No. 14, 52, Oct. 4, 1923), and by the ordinary process: bone-dry weight of wood 46,053, 44,895 lbs.; total sulphur dioxide in acid 3.97, 4.26%; free SO_2 2.33, 2.59%; combined SO_2 1.44, 1.67%; quantity of acid 25,000, 25,000 gal.; steam used (from and at 100° C.) 46,022, 63,371 lbs; pulp produced 12.23, 9.98 tons (air dry); screenings and knots 0.22, 0.65 tons (air dry); bleaching test (17.1, 33.7% of 35% bleaching powder); strength test (standard method of TAPPI: 300), steam per ton of pulp 3,763, 6,350 lbs.; time of cooking (including relieving time if any) 13 hrs., 10 hrs. 20 min., yield of bone-dry pulp from bone-dry wood 48.44, 40.19%; screenings 1.38, 6.49% (of total pulp). Results are for one cook by each method. The temperature and acid strength during the course of the cooks are tabulated and plotted.-A.P.-C.

E-0 F-0 K-0 Application of the Cottrell Electrical Precipitation Process to the Pulp and Paper Industry. P. E. LANDOLT and N. W. SULTZER. **Paper Trade J.** 77, No. 12, 48-49 (Sept. 20, 1923); **Paper Mill** 47, No. 38, 38, 40 (Sept. 22, 1923); **Pulp & Paper** 21, 959-960 (Sept. 27, 1923); **Paper** 32, No. 23, 7-8, 23 (Sept. 26, 1923). Brief outline of the possibility of using the Cottrell process for black ash recovery, cleaning sulphur gases (removal of SO_2), and cleaning hot waste gases from boilers, furnaces, etc., so that these gases can be used for drying operations.-A.P.-C.

E-4 Tests on Gas from Pyrites Burners. ERICH RICHTER. **Wochbl. Papierfabr.** 54, 1521-1524 (June 2, 1923). The reaction between concentrated potassium iodide solution and sulphur dioxide is inaccurate for the testing of pyrite burner gas. The ordinary absorption apparatus gives continually deviating values for sulphur trioxide. An apparatus is described in which the gas to be tested is slowly passed through a cold condensation tube whereby the SO_3 is condensed and subsequently is determined in the usual gravimetric way. Comparative results for SO_3 were obtained.-J.L.P.

G-7 Refining of Pulp. CARL G. SCHWALBE. Ger. pat. 378,260. **Papierfabr.** 21, 347 (July 22, 1923). Pentosans are removed from sulphite pulp by treatment with a sulphite solution, especially mangnesium sulphite, with or without pressure. Lime or magnesia may be used in conjuction with such solution.-J.L.P.

E-5 Sulphite Cellulose. E. L. LARSEN. Swed. pat. 51,101, Mar. 1, 1922. The boiling time is reduced by subjecting the wood to a pressing before it is fed into the boilers.-C.J.W.

SULPHITE WASTE LIQUOR

E-3 Manufacture of Ethyl Alcohol from Sulphite Waste Liquors. HARNIST. **Chimie et Indus.** Special No. 658-663 (May 1923). A description of the commercial process with a brief discussion of possible improvements.-A.P.-C.

E-2 Evaporating Sulphite Waste Liquor. E. WIRTH-FREY. Can. pat. 231,625, June 5, 1923. The liquor is maintained alkaline during the entire period of evaporation. Calcium sulphate is removed by introducing carbon dioxide.-A.P.-C.

E-2 Determination of Calcium Sulphate (in Sulphite Waste Liquor). A. SANDER. **Paper** 32, No. 12, 5-6 17, (July 11, 1923); **Pulp & Paper** 21, 939 (Sept. 20, 1923); **Paper Trade J.** 77, No. 14, 52 (Oct. 4, 1923).-A.P.-C.

E-2 F-2 Colloidal Products Formed with Pulp Waste Liquors. L. BEHREND. U. S. pat. 1,460,012, June 26, 1923. Colloidal preparations are obtained by treating inorganic substances, e.g., compounds of mercury, copper, or chromium, with sulphite waste liquor or with black liquor.-A.P.-C.

(Continued on page 1178)

PULP AND PAPER NEWS

The many and varied uses to which parchment paper can be put, together with the excellent quality of the product, turned out by the Canadian Vegetable Parchment Co., Ltd., St. Catharines and Merriton, Ont., were illustrated to a striking degree at the firm's exhibit at the Royal Winter Fair in Toronto last week. The company had an attractively decorated booth wherein were shown neatly arranged containers of various kinds put out by many firms manufacturing such commodities as butter, cheese, ham, lard, sausage, ice cream, etc. These firms are extensive users of vegetable parchment and the imprints and trade marks on many of the containers shown in the display indicated that a large number of the big packing and other companies are using Purity Parchment — the product of the Canadian Vegetable Parchment Company. Purity Parchment is a purely Canadian product and is air-proof and grease proof, which makes it particularly adaptable for such uses as the butter maker, meat packer, etc., have for it in the attractive packing and display of their goods. It is also used for the protection of cut flowers and is made in circles of all sizes for such articles as jam and lard pails. Samples of corrugated parchment for biscuit tins were also shown, while there was a demonstration of the use of excelsior parchment for packing purposes which surprised many of the visitors to the booth. The display attracted considerable attention from the thousands who thronged the Coliseum and some people are going to get a nice monetary reward for guessing nearest to the weight of a huge bale of parchment which was especially packed for the purpose.

William Gorman, Montreal representative of the Provincial Paper Mills, Limited, was a caller at the head office of the Company in Toronto last week.

Edward Beck, Montreal, Secretary and Manager of the Canadian Pulp and Paper Association, spent a few days in Toronto last week, consulting with members of the committee on arrangements for the annual meeting in January.

J. D. Robb, sales engineer of the paper machine department of the Dominion Engineering Works, Limited, Montreal, and A. W. Russell, of the same department of the company, called on the Toronto paper trade last week.

The Executive Council of the Canadian Pulp and Paper Association have fixed on Jan. 23, 24 and 25 as the dates for the 11th Annual meeting of the association and its affiliated bodies. The gathering will take place at the Ritz-Carlton Hotel, Montreal. It has been announced that the annual banquet has been abandoned for this occasion and it will be replaced by the president's dinner.

The Interlake Tissue Mills, Limited, Thorold, had an attractive display of their tissues, toilets, crepes and other light weight papers at the industrial exhibition in St. Catharines last week. The event took place at the armories where products of factories in the St Catharines district were shown.

George Allan, general manager of the Buntin, Reid Company, Limited, paper jobbers, Toronto, has returned from a business trip to Montreal and other Quebec points where he called on many of the firm's customers.

L. E. McClachlin, general sales manager of the Strathcona Paper Company, Strathcona, Ont., was a recent caller on the Toronto paper trade.

Steel for the lower yards at the plant of the Great Lakes Paper Company at Fort William has been ordered. The order is for 10,000 feet, and it is expected that the company will accept delivery of pulpwood this winter. The rails, which will be placed on ties as soon as received, will also make possible the economical reception of much of the mechanical equipment which is on order for winter delivery.

George Carruthers, head of the Interlake Tissue Mills, Limited, Thorold, has returned to Toronto from Montreal where he addressed the Canadian Paper Club, urging greater co-operation between the pulp and paper men and the paper interests. He also, as vice-president of the Canadian Pulp and Paper Association, frankly told the paper men that they were using up the Canadian forests much faster than the forests could produce trees, and that unless efficient co-operation for forest conservation were organized between the two interests there were inevitably bad times ahead for this great Canadian industry. Mr. Carruthers' address made a deep impression on those present.

J. W. Dafoe, editor of the Manitoba Free Press, was a visitor in Toronto last week while on his way back to Winnipeg after a visit to Europe. Mr. Dafoe, who attended the Imperial Conference, was somewhat depressed with the outlook in Great Britain and France and stated that doubt and pessimism were walking hand in hand in those countries. He compared the economic conditions existing in England with those prevailing in Canada and declared that we in this country had a great deal to be thankful for. He expressed the opinion that the present election campaign in England would result in a stalemate.

Sir Adam Beck, chairman of the Hydro-electric Power Commission, spent last week in the Port Arthur district and while there asked Fort William to put a formal resolution through the City Council asking the Hydro for a supply of power. Sir Adam promised co-operation and assistance in the matter of power supply. It will be brought in from Cameron Falls, using Port Arthur's lines and those of the Kaministiquia Power Company. The development now made at Cameron Falls is almost entirely taken care of, with the delivery within three weeks' time of 4,000 horsepower to the reorganized mill at Nipigon. Sir Adam is cognizant of the fact that the Port Arthur sub-station is now overloaded from fifteen to twenty per cent, and wishes to guard against any further overload. He stated that the Hydro would be prepared to deliver 3,000 horse power to Fort William, and that just as soon as the third unit at Cameron Falls is completed, the other three units will be rushed to completion, giving an output from Cameron Falls of 75,000 horsepower.

The Marmora Herald Printing Company, at Marmora, Ont., has been organized and has been granted an Ontario charter authorizing them to take over the business of Howard W. Sabine. The authorized capital of the company is $10,000. The company will carry on a general printing and publishing business.

Work is progressing favorably on the remodelling of the two old drums of the Mattagami Pulp and Paper Company's plant at Smooth Rock Falls, Ont., following the installation of two new barking drums, making a total of four that will shortly be in operation.

J. D. Robb, sales engineer of the Dominion Engineering Works, Montreal, who was calling on the Toronto paper trade last week interested many listeners with stories of the great Japanese earthquake. Mr. Robb and his family, who were living in Japan at the time of the tragedy, had very narrow escapes and lost practically all of their possessions, including their home and Mr. Robb's office.

The sympathy of a large number of friends in the Canadian paper trade will be extended to H. F. E. Kent, Toronto, President of the Canadian Pulp and Paper Association, in the death of his mother, Mrs. Henrietta Kent, which took place last week at her late residence, 149 Lytton Boulevard, Toronto. The late Mrs Kent was born in Yorkshire, England, and came to this country with her mother, settling in Brampton, near Toronto. She was a woman of many estimable qualities and was prominent in philanthropic and church affairs in Toronto.

The death took place suddenly in Stratford on Nov. 21st., of Charles Dingman, editor of the Beacon-Herald in that city. Deceased, who was in his 56th year, had held many newspaper positions in various parts of Canada, having been on the staffs of the Montreal Herald and Winnipeg Telegram. W. S. Dingman, of the Ontario License Board, is a brother, and another brother, H. H. Dingman, runs the St. Thomas Times-Herald.

L. L. Brown, of Victoria, B. C., Chief Lumber Commissioner for British Columbia, and wife, were in Toronto a few days ago on their way to London, England, where Mr. Brown will supervise the special exhibit of wood products from the Pacific Coast province at the British Empire Exhibition which starts next April.

The new paper bag factory of Kilgour Brothers, Limited, Toronto, which is being erected at Windsor Mills, Que., will be ready for manufacturing operations at the beginning of the new year, when the paper bag department of the company will be removed to Windsor Mills to make room for the firm's other activities.

H. P. Reid, superintendent of the paper box and printing departments of Kilgour Brothers, Limited, has returned to Toronto after an enjoyable visit with friends in Peterboro.

The Central Paper Company, a corporation doing business under the laws of the State of Michigan, has been granted an extra Ontario provincial charter to manufacture and deal in pulp and paper in the Province of Ontario and is authorized to invest one million dollars in their operations in that province. The Ontario representative of the company is A. C. Boyle, Fort William. H. E. Jones, secretary of the company at Muskegon, Mich., states that although the concern has taken out an Ontario license to manufacture in Ontario they have not yet made arrangements for any definite development of the timber limits they have acquired in Ontario.

Mr. William Reid has again joined the sales force of the Beveridge Supply Co., Limited, 628 St. Paul Street, W., Montreal as Sales Manager for the Maritime Provinces.

Mr. T. L. Crossley is busy at Fort William and Port Arthur, enrolling students in the Pulp and Paper course of the Institute of Industrial and Domestic Arts. The Institute now has enrolled more than 440 students. A picture of the machine room in the Port Arthur mill is shown in the advertisement on page 20 of the Dominion Engineering Works, who built this machine. The machine room and special hood arrangement were designed by H. S. Taylor, Limited, Montreal.

OPENING OF NEW YORK OFFICE

Guy Tombs Limited, 285 Beaver Hall Hill, Montreal, announces the opening on November First, 1923, of offices in Rooms 653-5, 11 Broadway, New York. Telephone: Bowling Green 6688-6689. These offices are fully equipped to quote rail and ocean rates, make overseas bookings and expedite the handling of freight generally. Certified survey and weighing Departments are also at the service of clients.

PROJECTED AMERICAN PAPER PLANT IN N.B.

What are regarded as preliminary investigatory tests for foundation for the suggested big pulp and paper plant to be erected on the St. Croix River at St. Stephen, N.B. are being carried on by a staff of engineers, according to a report received last week. It is understood that this is to be followed by construction of a huge plant by the Hollingsworth and Whitney interests, whose head offices are in Boston.

The Hollingsworth and Whitney interests now control mills in Maine and elsewhere and are one of the most important manufacturers of wrapping paper in the United States. They were recently reported to have acquired extensive timber holdings on the Canadian side of the upper St. Croix River.

MAIN ROAD FROM STURGEON FALLS NORTH

The Financial Post for Nov. 23 reports that "the highway to Northern Ontario is to start north from Sturgeon Falls instead of North Bay."

The paper adds: "It can authoritatively be stated that this has been decided upon. Survey work will be done this winter. Construction will start in the spring.

"The new highway will start out from the home of the eastern plant of the Spanish River Pulp and Paper Company, and go north along the Sturgeon River, around the west end of the famous Temagami Lakes and then northeast into Cobalt."

Sturgeon Falls is located on the C.P.R. about 20 miles west of North Bay.

E-2 Tanning Material and Resin Substitutes by Chlorination of Sulphite Waste Liquor. A. SCHMIDT. Eng. pat. 178,104. Mar. 31, 1922. Highly chlorinated stable products (containing 20 to 30% of chlorine), capable or forming soluble salts with alkalies or partially insoluble salts with heavy metals, and suitable for use as tanning materials, or as substitutes for natural resins and the like, are obtained from sulphite waste liquor by the following process. The liquor is evaporated without application of heat to a concentration of about 25%, is treated hot with chlorine gas for about 2 hr. The resulting precipitate is separated and treated with a chlorate and hydrochloric acid until the product of the reaction contains about 20% of chlorine.-A.P.-C.

E-2 F-2 Fire-Extinguishing Composition from Pulp Waste Liquors. A. BIDDLE assignor to United Products Corporation of America. U. S. pat. 1,426,207, Sept. 5, 1922. In the soda and sulphite processes there are produced waste liquors, respectively "soda glutrin" and "sulphite glutrin" (the inventor probably refers to concentrated black and sulphite waste liquors. It is rather difficult to see why he chose the name "glutrin.")

Both of these liquids are very viscous. If they are mixed a non-combustible gas is evolved, which owing to the viscosity of the liquids, forms a thick foam which is very effective in extinguishing fire, especially that from burning oil where water is inapplicable. If desired sulphuric acid (or other acid) may be added to the acid liquor and sodium bicarbonate, etc., to the alkaline liquor to increase the evolution of gas. Also, one or other of the liquors may be replaced by acid or sodium bicarbonate solution according to which is used. The extinguishing properties of the foam may be enhanced by the addition of a small quantity of carbon tetrachloride.-A.P.-C.

E-2 Fuel Briquettes from Sulphite Waste Liquors. LA SOCIETE DITE L'AVEBENE. Eng. pat. 197,901, June 29, 1923. Neutralized sulphite waste liquor is concentrated, the solid product is pulverized and mixed with fine crushings or dust of anthracite, coke, coal, etc. Water may be added if necessary. The mixture is agglomerated under a relatively low pressure, and baked at a temperature up to about 200° C.-A.P.-C.

E-2 Alcohols from Sulphite Waste Liquor. E. S. SANDBERG, H. A. E. NILSSON and J. V. BLOMQUIST. Swed. pat. 53,317, Jan. 3, 1923. The liquor, after neutralization, is evaporated to a concentration suitable for fermentation, by which evaporation about half of the methyl alcohol of the liquor is obtained in the condensate and is recovered from this. The residue from the first-mentioned evaporation is neutralized, fermented and evaporated. Some methyl alcohol and ethyl alcohol are obtained in the condensate and are separated in a column apparatus.-C.J.W.

E-2 Distillation of Sulphite Waste Liquor. H. O. V. BERGSTROEM. Swed. pat. 50, 740, Jan. 25, 1922. A considerable amount of the distillation vapors or mixtures of these vapors with air or other gases is overheated and applied to the liquid in the distillation apparatus to which it gives off its excess heat. That part of the distillation vapors that does not take part in the circle process is taken out, eventually under pressure, and the heat utilized for other purposes, while the content of organic acids is recovered by conducting the vapors through milk of lime.-C.J.W.

E-5 Utilizing the Heat of the Liquor Tapped off from Sulphite Boilers. E. FROM. Swed. pat 52,976, Nov. 15, 1922. The used liquor is conducted through one or more heat-exchanging apparatus through which the fresh sulphite liquor is also passed in counter-current, the liquor circulating in a closed system.-C.J.W.

E-2 Recovering Sulphur Dioxide from Cellulose Liquor. H. A. E. NILSSON. Swed. pat. 51,399, Apr. 5, 1922. The liquor is driven from the boilers into a closed vessel by means of the pressure in the boilers. Sulphur dioxide and some water are disengaged and drawn off into an acid-container by suction induced by keeping the liquid in this container in continuous circulation through an ejector connected with the container. The suction force of the ejector is regulated so as to maintain a pressure in the container approximately corresponding to atmospheric pressure.-C.J.W.

E-2 Sugar from Sulphite Waste Liquor. P. G. EKSTROEM. Swed. pat. 51,682, May 10, 1922. Waste liquor or other liquids low in sugar are enriched with this compound by addition of starch-containing products such as wastes from bakeries, which products are treated at increased temperature with a dilute acid, e.g., the sulphur dioxide in the waste liquor. The resulting liquor is worked for sugar or fermented to alcohol.-C.J.W.

E-2 Counteracting the Formation of Scale in Evaporating Apparatus for Sulphite Waste Liquor, etc. H. O. V. BERGSTROEM. Swed. pat. 53,794. Feb. 14, 1923. The scale is subjected to the action of liquids which transform the neutral sulphites into soluble acid sulphites, for instances aqueous sulphur dioxide or fresh sulphite liquor.-C.J.W.

E-2 Utilization of Sulphite Liquor, with an Explanation of the Strehlenert Process. K. MORCH. **Tids. for Kemi Og Bergvaesen** 3, 44-48 (1923); **Chem. Abs.** 17, 3099. In his own plant Morch uses three lead-lined autoclaves in succession, in combination with a preheating system. The liquid from the boilers is pumped by 20 atmospheres pressure through the preheater and next into the bottom of the first vessel, where air and some steam are also applied. From the top of the vessel the mixture of air and liquid is conducted into the bottom of the second autoclave and so on. From the top of the third vessel the mixture of air and gases is let out, while the liquor goes to the preheating system to give off some of its heat to the untreated liquor and finally into a sedimentation vessel where the lignites sink to the bottom. After decantation a substance with about 50 of dry matter is obtained, which can be easily burned. The content of dry matter in the mother liquor can be worked down to about 3% by this procedure.-C.J.W.

E-2 Evaporating Liquids Containing Easily Decomposable Organic Substances, for Instance Sulphite Waste Liquors. AKTIEBOLAGET REYMERHOLMS GAMLA SPRITFOERAEDLINGS. Swed. pat. 52,734, Sept. 20, 1922. The liquid flows with great velocity in thin layers that are passed on all sides by the heating medium. The velocity and temperature are regulated so as to counteract the formation of crusts on the heating surfaces. The pressure is kept sufficiently high to avoid any boiling inside the heating apparatus.-C.J.W.

A man is what his heart is—his faith and hopes **and** purposes. As he thinketh in his heart so is he.

UNITED STATES NOTES

The Northern New York Division of the Association of Pulp and Paper Mill Superintendents convened at Carthage, N. Y. November 17. A business meeting held at the Carthage Club was marked with an interesting discussion relating to mechanical and technical mill matters. Steam turbines, pulverized coal and various types of grinders came in for much attention in the course of the discussion. At the banquet given in the Elmhurst Hotel, Dr. Hugh P. Baker, executive secretary of the American Paper and Pulp Association, delivered an address devoted largely to the question of reforestation. Delegates made visits to some of the paper and pulp plants in Carthage and vicinity, including those of the Carthage Paper and Pulp Company and the National Paper Products Company.

The Union Wax & Parchment Company of Passaic, N. J., which went into the hands of a receiver some weeks ago, has been taken over by a new concern, to be known as the Union Wax & Tissue Company. The latter includes interests that were formerly identified with the operation of the mill.

The United States Senate's Committee on Reforestation last week resumed its hearings, taking testimony which will be made the basis for a national policy to protect and preserve the forests of the United States and assure an adequate supply of timber for future needs of the people. The present hearings in the Capitol will conclude a series of hearings that have been held in all parts of the country since last March. Testimony has been assembled by the Committee in about twenty cities and conditions in all principal timber growing areas have been analyzed.

Charles R. McNair has been appointed ancillary receiver in equity for the Durham Paper & Pulp Co., Phillipsburg, N. J., in a suit filed by the Invincible Paper and Pulp Corporation which holds a claim of $7,831 against the debtor company. The liabilities are said to be upwards of $1,000,000 and the assets have a book valuation of over $2,000,000. Liquid assets total about $500,000. It is said the company is solvent, but the receiver was asked for to preserve assets and to prevent any creditors getting preference. The company is one of the oldest paper manufacturing concerns in the country, operating six paper mills and one pulp mill. Its plants are located in Durham, Pa., Hadley, Forrestport and Napanock, N. Y.; Rising Sun, Md., and Seymour, Conn. Its New York office is at 17 East 42nd Street.

Damage estimated at $75,000 resulted from a fire last Thursday in the paper and box warehouse of Alfred Bleyer & Company in Maspeth, Queens County, New York City. The employees made their way from the buildngs without injury.

At a hearing of the Senate Committee on Reforestation at Harrisburg, Pa., last week just before the Committee began final hearings in Washington, Gifford Pinchot, Governor of Pennsylvania, declared that no forestation policy is complete that does not prevent devastation on privately owned lands. "Devastation" was defined by the Governor as cutting without reference to reforestation and failure to use effective fire prevention methods. He said he would suggest utilizing taxation methods to prevent devastation and penalize the owner who did not adhere to a national policy by increasing his taxation and at the same time lessen that of the owner who complied. The policy he advocated was the payment of a bounty to lumbermen who conducted their operations according to standards established by the Federal Forest Service, the bounty to be paid by a tax on forest products.

A new issue of $700,000 first mortgage, sinking fund, 6 1-2 per cent. gold bonds of the Washington Pulp and Paper Corporation, are being offered by Blyth, Witter & Co., New York. The bonds are due December 1, 1928. Annual sinking fund payments, amounting to 6 2-3 per cent. of the issue, commence in 1924.

A circular sent to holders of the 6 per cent first mortgage bonds of the American Writing Paper Company by the bondholders' protective committee announces that only about $4,000,000 of the $9,294,000 bonds outstanding in the hands of the public have been deposited. The deposit time has been extended to January 10 and the committee points out that if sufficient deposits have not been received by that date the committee's efforts will end. The letter says that some of the properties are not in good shape and that large expenditures for deferred repairs must be made to insure economical operation. A letter from S. L. Wilson, receiver for the company, to George C. Lee, chairman of the bondholders' committee, points out that numerous economies have been made which will result in large savings in operations.

The *Compressed Air Magazine*, published in New York City, has made up its November issue as a special Canadian number. The leading article of this number is by S. G. Roberts. This bears the title, "Canada's Position in the Paper-Making Industry One of Rapidly Increasing Importance." Mr. Roberts' article carries a number of very clear illustrations which show in detail, as does the text of the article, scenes in and about a typical Canadian mill. While Mr. Roberts' description is confined mainly to the mill of the St. Maurice Lumber Company at Three Rivers, Quebec, it sketches incidentally the paper-making processes from pulpwood to finished paper in a manner making it interesting to read. The balance of the space in the special number of the publication is devoted to articles telling of the advance of other Canadian industrial activities.

The forest products division of the American Society of Mechanical Engineers has arranged to conduct a symposium on forestry questions. Engineers from all over the country will gather under its auspices in New York City next Wednesday. There will be a discussion of resolutions definitely committing this society, the largest of the national engineering organizations, to a constructive program and to action calling for a year's comprehensive study of conservation and standardization. The symposium will be held in connection with the annual meeting of the Society and is expected to bring suggestions as to methods that engineers can adopt to accomplish the ends which the Society's reforestation committee seeks to have brought about. The Society, in a statement summarizing the existing situation, asserts that conservation of the present timber supply, pending the development of a broad national program, demands standardization of grades for economy, rational specifications for construction and efficient waste utilization.

The Markets

CANADIAN TRADE CONDITIONS

Ontario Market News

The statement was made to the Pulp and Paper Magazine of Canada in Toronto last week by a leading jobber in flat papers that the first ten months of the present year had yielded more business than he had expected and that during eight of the ten months the volume of business done exceeded that of the corresponding period of last year. This is somewhat representative of what the majority of the paper jobbers are discovering just now when business is undoubtedly dull. They are casting up their accounts and are finding that the year's operations are going to show a pretty fair turn-over and a fair margin of profit. While it is true that a lot of Christmas trade that usually evinces itself at this time of year has not materialized the paper jobbers are hopeful of better sized orders and more of them for the balance of the season and extending into the new year and in any event many of them have cause to be satisfied with the results so far achieved, even should the balance of the year not show an improvement in conditions. Some jobbing houses have undoubtedly been rather hard hit through draggy business during the past few months but all of them have been able to keep afloat and many of them have prospered despite the quiet trend of trade that has prevailed since summer set in. Optimism pervades the distributing end of the paper trade and jobbers have kept pegging away, knowing that a multitude of small orders was going to make a fairly good showing at the end of the year and that is just about what is happening. The jobber who stated that his turnover in eight of the ten months of the year was greater than during the same period last year is typical of many distributors who had similar experiences. As for the paper manufacturers, there are none to be found who do not take an optimistic view of conditions, while admitting that for the moment there is no great rush of business. Some mills are running light and there are few lines of paper that are being anything like heavily stocked by jobbers or printers. The board mills are passing through a rather difficult period and outside of kraft there has not been the demand for wrapping papers that the approach of Christmas usually brings. On the other hand some of the book paper mills are exceedingly busy and have orders ahead. Mills turning out bonds, writings and ledgers, as a rule, are only moderately busy. On the other hand the Provincial Paper Mills, Limited, report that they have orders booked well ahead for their special sulphite bond which is being turned out at their Port Arthur mill and which is finding a ready market at home as well as abroad. The company have been running on it for the past two months and expect shortly to have it watermarked. Manufacturers of coated papers are enjoying distinctly better business and coating mills are running full with a good demand for their product. Naturally the quiet period that has been prevailing in some lines of paper has developed the price cutter and the Pulp and Paper Magazine of Canada heard of instances last week where several of the smaller mills, under the stress of needed ready money, had shaved prices to cost and under. There has been more or less price-cutting in both the manufacturing and distributing ends of the paper industry but it is not widely prevalent and has had no very wide effect on the market, generally speaking.

PULP.—There is no material change in the pulp market, although there has been a slightly weaker tendency in both groundwood pulp and the chemical pulps during the past week. As far as can be learned no large transactions are taking place although groundwood is now quoted as low as $44 with bleached sulphite at $85, unbleached at $65 and news grade at $65.

NEW YORK MARKETS

New York, November 24.—(Special Correspondence) — Activity in some branches of the paper industry continues on a broad scale; in others a much quieter condition exists. Viewing the market as a whole, there is at least normal business current; if anything, activity is a little better than normal, that is based on a normal since the war. Paper is moving into consuming channels in a consistent way if not in as heavy volume as many in the trade had anticipated for about this time of the year, though there are several kinds of paper which are being absorbed by consumers in larger amounts than the industry has ever known, which offsets in a measure the relatively slower demand for other papers.

Users of paper continue to place orders in a reserved manner. There is little disposition shown to purchase ahead. Orders sent to mills today are for supplies to be consumed tomorrow, so to speak. Jobbers are as bad in this sense as are consumers. New York paper dealers are probably carrying smaller stocks at present than ever in the past; frequently it is necessary for buyers of even minor lots of paper to wait until jobbers have obtained the paper from mills before they can secure deliveries. One reason for this is that dealers have been occasioned little delay in recent months in getting prompt shipments from mills, another is that there is a general policy of endeavoring to keep capital liquid these days, still another is that with the end of the year near jobbers are desirous of holding down stocks for the inventory period. One of the unfavorable features in the paper industry at the moment is that a good many mills have little business booked ahead. This does not apply to those plants which dispose of most of their output on contracts but it does involve a considerable number of fine paper, book, wrapping and specialty mills.

There is no let down in demand for newsprint. The crest of pre-holiday retail buying is almost here and publishers are printing issues of as many pages as they have facilities for in order to carry all the display advertisements of department stores and other merchants, while newspaper circulation is on the increase, as it usually is at this season. Consumption of print paper consequently is at a very high point; in fact, there is doubtless more newsprint being used than ever before, and mills are being rushed to turn out all the paper publishers are asking for, with shipments made about as quickly as the paper leaves the machines and is made ready to ship. Moreover, reports say that publishers, in arranging contracts for next year's supply of newsprint are ordering larger tonnage than they have absorbed this year, which insures a continuance of brisk activity in the print paper industry after the turn of the year.

There is no doubt that the recent weakness in box boards has been caused in part by the sharp declines in waste paper prices. Probably no other product of the paper industry follows so closely the market trend of raw material as paper board, and with old paper on the downslide during the past month or two, prices of box boards have receded in like proportion. Now that the waste paper market is showing signs of strengthening — with some slight advances already noted in prices of certain grades — it appears likely that boards will stiffen in value. At the moment manufacturers are competing keenly for business and are not permitting the matter of price to stand in the way of them securing orders, so that board quotations are anything but firm. Plain chip is freely offered at $45 a ton f.o.b. New York, and news board at $47.50 to $50, with the probabilities favoring buyers getting some supply at slightly under these figures. Board demand has been far from satisfactory during the present pre-holiday season, and it is believed consumers' stocks are down to the bone, which may lead to a brisk buying movement, it is expected, should prices show a rising trend.

Fine papers are steady in price and demand but the market is not over active, orders mostly calling for rather small lots. One of the largest producers of domestic kraft wrapping paper reports securing around 6.50 cents a pound f.o.b. New York for No. 1 domestic kraft paper, with the foreign product reported selling at slightly below this basis. Tissues are quotably steady and have enjoyed quite a little run of demand in the past few days, reflecting the buying for the holiday trade. Book papers are in moderate demand with the market exhibiting virtually no feature.

GROUND WOOD. — Mechanical pulp is holding its own in price in a market which displays fair activity and which is at least sufficiently broad to absorb the great bulk of pulp being offered by producers and importers. Consumption of ground wood is heavy, of that there is no doubt, and there is not a large supply available in the open market since most grinders are sold up on contracts and since a good many of them are using so much pulp themselves they have little to direct to transient buyers. Domestic ground wood of prime spruce quality is selling at around $42 a ton f.o.b. producing mills, while quotations on Canadian ground wood are on a rather wide range, it being reported that manufacturers across the border are securing $50 and higher at shipping points, whereas dealers in New York say they are selling Canadian pulp down to $38 a ton f.o.b. grinding plants.

CHEMICAL PULP. — With reports telling of an early winter in Northern Europe and the Baltic likely to freeze up any day, and with winter approaching in the United States when pulp production is due to decrease, a firmer undertone is in process of developing

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in chemical wood pulp. Sellers are much less anxious to effect sales, and paper manufacturers are looking around to see where they can buy pulp at prices which meet their fancy; moreover, it is apparent that counter bids of consumers are being frequently turned down by producers and importers who in a majority of instances feel that the market has touched bottom

Not much actual change has occurred in quoted prices. Buyers are still seeking supplies at concessions, and most sales are at rates slightly under those quoted by sellers because demand has not improved to a degree to make for any advance in values. Prime foreign strong unbleached sulphite is selling at around 2.90 cents a pound ex dock New York, foreign kraft pulp at 2.75 cents, foreign bleached sulphite at 3.90 to 4 cents, and foreign Mitscherlich sulphite at 2.90 to 3 cents. Domestic No. 1 bleached sulphite is quoted at $80 per ton at pulp mills, news grade sulphite at $55, strong unbleached sulphite at close to $60, and No. 1 kraft pulp at around $60.

RAGS. — Papermaking rag prices are holding at last reported levels and the market is moderately active. Mills are buying carefully; that is, principally to cover immediate wants, but the rather limited demand is offset largely by lack of sizeable accumulations in dealers' hands, thus removing the necessity of sellers pressing sales. New cuttings of some kinds have stiffened a little in price. New York dealers quote 13 cents a pound f.o.b. New York for No. 1 white shirt cuttings, 11.50 cents for unbleached muslins, 8.25 cents for blue overall cuttings, 8 cents for light silesias, 5.25 cents for washables, and 6.25 cents for fancy shirt cuttings. Roofing rags are steady at 1.35 cents a pound f.o.b. this city for No. 1 packing, and 1.25 cents for No. 2 stock, and old whites and blues are selling at maintained rates. Demand from fibre mills, shoddy and shredding plants and other sources other than paper mills is said to be a factor making for steadiness in rags. This demand, of course, is due largely to the high price of raw cotton, which makes for a bigger use of substitutes for the staple.

PAPER STOCK. — Prices of some grades of waste paper have stiffened this week, and the tone of the market has improved to a pronounced degree. This seems due more to conditions at the supply end than to any appreciable increase in demand although some consuming mills have been more actively in view as buyers than they were. Old folded newspapers have advanced about $2 a ton to 80 to 85 cents a hundred pounds f.o.b. New York, and No. 1 mixed papers are now selling at 50 cents New York. Overissue newspapers, which were down to one cent a pound New York, are quoted at 1.10 to 1.20 cents per pound f.o.b. this city, and sellers are firm for at least 2.10 cents a pound for white blank news cuttings and 2.05 cents for No. 1 old kraft paper. Magazines are quoted at 1.40 to 1.50 cents a pound New York for heavy No. 1 flat stock, and at 1.25 cents for No. 1 crumpled.

OLD ROPE AND BAGGING. — Old manila rope is firm in price and under active inquiry. Domestic rope is selling at 6.75 to 7 cents a pound f.o.b. New York for strictly No. 1 manila rope, and importers assert they must necessarily secure 6.50 cents a pound ex dock New York for foreign rope in order to bring the commodity in at a profit against the prices demanded by European shippers.

INDUSTRIAL ITEMS

Dwight P. Robinson & Company Open Atlanta Office

Dwight P. Robinson & Company, Inc., of New York, have opened an Atlanta Office in the Healey Building, with W. Rawson Collier in charge. Mr. Collier was for many years with the Georgia Railway & Power Company. He joined the Dwight P. Robinson forces several months ago, coming to them from the Poughkeepsie Gas & Electric Co. He is a graduate of the Massachusetts Institute of Technology, and has been prominently identified with the work of the National Electric Light Association, the American Institute of Electrical Engineers, the American Gas Association and the Illuminating Engineering Society.

The opening of the Atlanta office gives the company a total of eight branches. Other branches are at Chicago, Pittsburgh, Youngstown, Philadelphia, Montreal, Los Angeles and Rio de Janeiro.

Among the company's recent activities in the south are the new wet-process cement plant of the Lehigh Portland Cement Company at Birmingham, Alabama; extensions to the steel plant of the American Rolling Mill Company at Ashland, Kentucky; extensions to the power generation and distribution systems of the New Orleans Public Service Inc., New Orleans, and the design and construction of the fifth sulphur mining plant which they have built for the Freeport Sulphur Company at Hoskins Mound, Texas. The company is also arranging to build a 300 room Club-Hotel at Palm Beach, Florida.

U. S. PAPER IMPORT STATISTICS

That paper imports during 1923 will break all records is shown by a compilation of Department of Commerce figures made by the American Paper and Pulp Association of the import statistics for the first nine months of the year. With nearly $85,000,000 worth of paper imported for the nine months ending with September, it is evident that the year's total will, if this rate of import is continued, reach $113,000,000. The nine months total is about equivalent to the highest previous entire year.

The totals are as follows, by grades: Newsprint $72,493,213; Book $831,674; Board $2,367,649; Wrapping $3,147,864; Fine $467,629; Tissue $688,279; Hanging $426,172; All Other $4,465,786; Total $84,888,266.

Mr James W. Sewall, the Forest Engineer, of Old Town, Maine and Washington, D. C., reports that the usual seasonal quiet in his business of cruising, valuing and mapping timberlands, has failed this year to materialize. Both in number of different jobs and in size of areas covered, the year 1923 has been the largest the Sewall Organization has yet encountered, and no lull is in sight. From this it may be deduced that there is considerable activity in timberland circles, and also that owners and operators are coming more and more to want more exact information on their timber and resources than formerly.

Mr. James Brown of the J. L. Morrison Co., Toronto has just returned by the S.S. "Doric" to Montreal after a very interesting business trip in Europe which extended over two months.

In the course of his trip he visited the British Metropolis and from London he accompanied his friend, Mr. J. M. Evans, General Manager of the Lamson Paragon Supply Company, on a motor tour on the Continent, taking in Paris and Geneva.

POWER SHOW NEXT WEEK

The manner in which valve manufacturers have solved the problem of valves and fittings for the high temperature steam plants which modern economies demand will be clearly displayed at the Second National Exposition of Power and Mechanical Engineering at the Grand Central Palace, December 3 through 8. This group of exhibits will include complete displays of boiler mountings, steam and water lined valves, non-return valves, pop valves, blow-off valves, water columns, water gauges, globe and angle valves.

The entire line of steam specialties will be on view at the Exposition. There will be a large group of manufacturers showing steam traps, damper regulators, steam regulators, water regulators, air regulators, injectors and ejectors, inspirators, oil separators and grease extractors. One particularly interesting exhibit of steam traps will show a glass model of a trap working under steam pressure. The outfit consists of an electrically heated boiler with pump so arranged that water can be supplied to the reservoir which the trap drains. In this case the trap is designed so that it may be placed above the reservoir. An air pump is connected so that air may be pumped into the reservoir and the action of the trap handling air can be demonstrated.

The importance of high grade packings and gaskets for high pressure steam as well as for a great variety of liquids and gases used in industrial and chemical plants should attract attention to the section of the Show devoted to these materials.

STREAM POLLUTION AND PAPER MILLS

Recognition of the position of the paper manufacturer that there should be a thorough investigation of the principal phases of the water pollution problem before an attempt is made to legislate on this matter has been given by the National Coast Anti-Pollution League in a suggested program which recommends a detailed survey as to present physical conditions, research as to methods eliminating pollution with reasonable conferences of particular industries involved. Mr. Sedley Hopkins Phinney, representing the League, has discussed this matter with Dr. Hugh P. Baker, executive secretary of the American Paper and Pulp Association, and has shown that the program of the Anti-Pollution League is not such as to mean improper legislation without a definite knowledge of all the conditions involved.

At the 1921 Congressional hearings, Secretary Hoover urged that there be an investigation of an exhaustive character and declared that any general prohibition of pollution as against all forms of pollution was not desirable at the present moment without more information. He added, "We might be doing in some localities infinitely more damage to industry and to commerce than the value of any fishery that could be established would warrant."

Dr. Baker, in appearing at some of the hearings, said that the paper industry was greatly interested in this subject because of its own need for large quantities of good, clean water, but that before any legislation is enacted, there should be a more definite knowledge than there now exists as to the actual effects of what the ignorant casual observer might suppose to be pollution.

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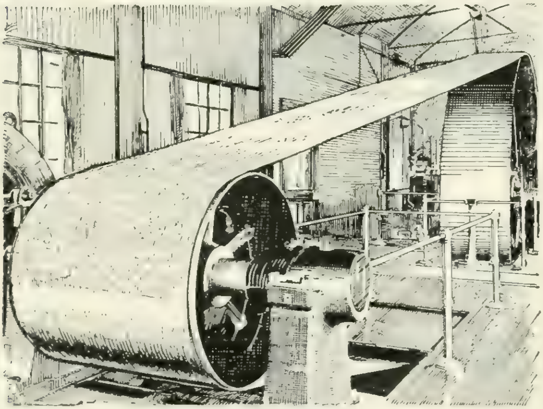

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:-: EDITORIAL :-:

GENEROUS WITH INFORMATION

The record of Franklin's theories, experiments and deductions with regard to electricity was largely in the form of letters to his friend Collinson, of London. In one of these he wrote:

> These thoughts, my dear friend, are many of them crude and hasty. If I were merely ambitious of acquiring some reputation in philosophy I ought to keep them by me, till corrected and improved by time and experience, but since even short hints and imperfect experiments in any branch of science, being communicated, has oftentimes a good effect, in exciting the attention of the ingenious to the subject, and so become the occasion of more exact disquisition and more complete discoveries, you are at liberty to communicate this paper to whom you please, it being of more importance that knowledge should increase than that your friend should be thought an accurate philosopher.''

In the foregoing letter, we have the essence of co-operative, scientific progress. Centuries ago, the Romans found that their warships could be manoeuvred more rapidly by putting a large number of men at the oars. Each man, of course, handled but his own oar, but by all working together, a great increase in speed was accomplished. The same principle applies to scientific progress, particularly in the line of industrial research. There are a great many investigators working on various phases of our principal industrial problems, and every stroke that each one of them takes is a move toward the goal. The best progress is made, however, by a co-ordination of effort, just as the progress of the boat is better when there is perfect unison of movement. This harmonizing of effort in scientific lines is accomplished by the publication in the various trade and scientific papers of the work that is being done and by reading papers at the meetings of our various societies. As Franklin has so well put it, it is not necessary to wait until the whole investigation of a subject is complete and verified, but it is important that each step definitely taken should be made known to fellow investigators.

One of the best mediums for tieing together the work that is being done in connection with the pulp and paper industry is the Technical Section of the Canadian Pulp and Paper Association. The Annual Meeting of this organization will take place at the Ritz-Carlton Hotel in Montreal January 23 and 24, and an opportunity will be given at that time for members who are not on the program for the reading of a definitely prepared paper to mention briefly at the meeting the work which they have in hand, and to indicate any definite results that have been accomplished. In this way, other investigators will be advised of what is going on. And for anyone who is bashful about speaking, the pages of the Pulp and Paper Magazine are open.

THE PACIFIC COAST

The Pacific coast states furnished over one-fourth of the product of the lumber industry of the United States in 1919, according to ''Commerce Monthly'', published by the National Bank of Commerce in New York. This paper continues: Timber reserves are so rapidly approaching exhaustion in other sections that the forest resources of the Coast must inevitably increase in value. If scientific conservation is practised, this source of wealth may be drawn upon indefinitely, as are the well-guarded forests of Europe. Furniture factories on the Coast produced 3.4 per cent of the furniture manufactured in the United States in that time.

It is strange that the pulp and paper industry on the Coast is not mentioned. In the states of California, Oregon, and Washington are 19 paper and board mills, with a capacity of about 450,000 tons per year. This is practically one-third the tonnage of newsprint produced in the United States, or about one-tenth the total paper production. It is perfectly true that the western forests may be drawn on indefinitely ''if scientific conservation is practised.'' The same is true of our Canadian forests; and it is far more necessary for us to practise such conservation. The forest is, to a far greater extent, the backbone of Canadian industry. There is certain to be a migration of several industries toward the Pacific coast, and that applies to Canada as well as the States. But migration of industry will do the West no good if it means the destruction of capital in the form of natural resources.

The bank predicts a great increase in industrial activity of all kinds on the Coast, largely due to improved power and transportation conditions. Such up till now there has been a good deal of overlapping and an insufficient communication of information.

The position of the Empire's mail, cable and wireless services as given by the Postmaster-General, Sir L.

activity is sure to be reflected in the prosperity of Western Canada, in spite of the fact that many of the natural advantages are the same. But the secret of permanent success is scientific conservation of the forest.

THE END OF THE CONFERENCE

For all practical purposes, both the Imperial Conference and the Economic Conference, which have been in session for the last six weeks, have now concluded their labors. The official text of the resolutions passed thereat will not be issued until Monday next, but it is possible now to get a very fair idea of what has been the net result of both Conferences.

That result, from the Canadian viewpoint, has been summed up, so far as the Imperial Conference proper is concerned, in concise fashion by a member of the Canadian delegation as follows, as announced in a Canadian Press cable:

1—A much clearer understanding of the Canadian position as to Imperial relations.

2—Recognition of equality and independent initiative in matters peculiar to one part of the Empire coupled with willingness to co-operate in matters of common concern.

3—The clearing up of the present position of the Dominions in respect to making treaties, with the unanimous understanding reached along the lines adopted by the Canadian Governments from the treaty of Versailles to the halibut treaty.

4—Recognition by the Admiralty for the first time of the principle of Dominion navies.

5—Emphasis on the responsibility of each part of the Empire for its own defence.

6—Recognition that it is for the parliament and people of each part of the Empire to decide on the measure of its own defence preparations.

So far as the Economic Conference is concerned, Canada will, under the preference proposals, benefit chiefly by the new preferential rates on canned salmon, fresh apples, sugar, tobacco and wines..

Some other practical steps towards the solution of several other matters upon which uniformity is desired throughout the Empire have been taken at other sittings of the Imperial Economic Conference, the discussions at which have covered a wide range of subjects. Two important Committees have been set up— one to examine the question of workmen's compensation, with a view to getting a common Empire policy in regard to compensation laws as they apply to non-resident workmen and to seamen, as well as to nationals of foreign countries, and the other to inquire into the best method of pooling information concerning scientific and industrial research and of making it available Imperially, the view being expressed that Worthington Evans, was a most useful contribution to the conference. Sir L. Worthington Evans claimed that all these services had been restored almost, if not quite, to pre-war regularity and efficiency, and in regard to the West Indian cable communications, he mentioned that a comprehensive scheme had been prepared and agreed to in principle by the Canadian Government and the Colonies concerned for a new cable from Turk's Island to Barbados, whence it would bifurcate to Trinidad and to British Guiana, the smaller islands being served by wireless stations subsidiary to the cable. The discussion which followed resulted in the passing of three resolutions, the first of which urged that representatives of the Dominions and India should be associated in the work of the Imperial Communications Committee when questions of interest to them were under consideration, while the second pressed for all possible support to the State-owned Atlantic cable route, and the third requested that in any concession given in the British Empire to private enterprise in respect of cable or wireless services, including broadcasting stations, preference should be given to companies within the Empire.

"CHEMICAL AUDITS" FOR PAPER MILLS

It is the business of chemistry to save time, money and effort by seeing that the most is obtained from raw materials, by improving processes of manufacture, and by eliminating waste.

Every industrial operation should be checked by a chemist or chemical engineer in exactly the same manner that financial operations are checked by an auditor, or that legal processes are approved by a lawyer.

Some paper mills are large enough to maintain their own auditing and legal departments; others only require such services at times. The same is true in chemical matters; some mills are of such a size that it is advisable to maintain regular technical departments, while with others the occasional services of a chemist suffice.

A thoroughly equipped laboratory is desirable in some mills, while in others it is hardly justified. Some mills should have an analytical chemist for the routine testing of materials and the checking up of processes, while in a mill desiring to improve some particular operation, or to utilize a waste product, a research chemist could be used to better advantage.

A chemical audit will determine from a technical point of view whether your operations are being carried on efficiently. It will also analyze your technical requirements and determine what sort of a technical staff is best adapted to your needs.

--Business Chemistry.

ELECTRIC LAMPS

The General Electric Company investigated the properties of Tungsten, and, by the use of a few hundred pounds for electric lamps, a saving of $250,000,000 annually is made in the United States alone.

Selling Canadians Their Own Wood[1]

While the paper manufacturers under the present tariff law are given protection to the extent of from 10 to 25 per cent ad valorem, according to classification, with some few items on the free list, the protection is by no means high enough to give them a monopoly of the domestic market, nor to lend very much encouragement to the development of the industry. In fact, except for newsprint paper and pulp — which owe their prosperity wholly to their favorable position in relation to the American market — the industry cannot be said to be in a prosperous condition. Competition in book and fine papers is exceedingly keen, while in the manufacture of wrapping and kraft papers the industry is overdeveloped and can hardly hope for improvement, until there is an increased domestic demand and a broader foreign market.

As indicating the inadequacy of the present tariff, to provide the protection needed to develop this industry — in all branches except newsprint and pulp, which, as already explained, are not affected by the Canadian tariff — it may be said that importations of paper into Canada have averaged about 8 million dollars a year for the past ten years and have run considerably beyond that amount in some years. They totalled $8,481,676 for the last Canadian fiscal year and this year will probably exceed that figure. A few of the larger items taken from the list of importations last year may be of interest. They include the following:—

Cardboard not pasted or coated	$ 329,379
Cardboard pasted or coated	105,392
Strawboard, Newsboard etc.	327,384
Book and Printing	500,622
Wrapping Paper	501,810
Bond and Ledger	118,200
Envelopes	136,710
Cigarette Paper	269,487
Wall Paper	357,881
Roofing and Building	376,953
Toilet and Paper Towels	93,021
Photographic, plain, basic	146,203
All Other Paper, n.o.p.	1,052,370

The bulk of these imports came from the United States. Last year the United States accounted for $7,177,981 — the United Kingdom $856,896 and other countries $446,799.

There exists a strong probability that many of these imports are brought into Canada in violation of our anti-dumping law but it is difficult to obtain proof. The regulations in force in Ottawa and at the Customs Offices throughout the country, do not lend themselves to the discovery of evidence and, in fact, retard and discourage investigation and enquiry of this nature.

The case for a higher tariff on pulp and paper products of the kind enumerated, however, does not rest alone on the necessity and desirability of building up a Canadian industry, but also on the fact that the cost of production on numerous grades of paper is relatively much higher in Canada than in the United States owing to the necessarily restricted demand in this country. A comparison of the machines employed in the manufacture of book paper in Canada with those employed in producing similar grades in the United States, discloses that ten mills in the United States, operating 71 machines, produce 1,697 tons of book paper a day or an average of 23.9 tons per *machine*, while in Canada the average is approximately 15 tons per day. The advantage of employing machines constantly on one grade and size of paper is with the American manufacturer. The limited market in Canada for this grade of paper makes frequent changes and delays in the operation of machines inevitable, and thereby enhances the cost of production appreciably.

The great question which is interesting the industry today, however, is that of the supply of Raw Material. The consumption of pulpwood in Canada has increased amazingly in the last fifteen years. From much less than half a million cords in 1908 it has risen to about 3 million cords during the current year. Added to this there has been an annual drain, by exploitation, to the United States, of over a million cords a year, every year since 1910. This year the amount exported will reach 1½ million cords, and probably go far beyond that figure. The pulpwood reserves have been still more seriously depleted by losses from fire and other causes. Some authorities place these losses at three, and others at as high as ten times the amount consumed or exported. The total cut is now computed as not less than 5 million cords a year. Experts tell us that Canadian pulpwood forests are being consumed at a much greater rate than Nature is restoring them, or than business prudence would justify. Conservation is practised to an inconsequential extent. Scientific forestry is still in its infancy. Reforestation is carried on in a few places, chiefly by private effort. The time is ripe for a new stock-taking of Canada's situation in regard to pulpwood. Parliament at its last session passed a law empowering the Government to stop exports of unmanufactured pulpwood. Since then, a Royal Commission has been appointed and is giving consideration to the general questions affecting pulpwood. The position of the industry in regard to the question of allowing further exportations of unmanufactured pulpwood is that, as a question of national policy, no one can gainsay the wisdom of keeping all raw materials, so far as is practicable and feasible, within the country and manufacturing them here. It is an anomaly that while Canada is allowing unmanufactured pulpwood to be exported to the United States, where it is utilized to compete with Canadian paper manufacturers in the world's markets, the American market, for many of the products derived therefrom, is absolutely closed to Canada by the existence of a prohibitive tariff. (They even sell paper, made from Canadian wood, in Canada in competition with the domestic produce.—Ed.) The Americans are fortunate in that they get it going and coming. It is true that the present American tariff imposes no duty on newsprint paper or on pulp. The privilege of shipping in these commodities free of duty is shared by Canada with other countries, and is taken advantage of by

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[1] Statement by H. F. E. Kent, president of the Canadian Pulp and Paper Association, at a meeting of the Canadian Manufacturers' Association in Toronto, Nov. 29, 1923.

Sweden, Norway, Finland and Germany. From none of these countries, other than Canada, does the United States derive raw pulpwood, so that the right to import raw pulpwood in exchange for the American market for newsprint and pulp, does not and never has entered into the consideration. Free entry is accorded solely on account of the fact that the United States is unable to supply its requirements. On all other grades of paper, such as Wrapping, Book and Fine Paper, Boards etc. the American duty ranges from 20 to 35 per cent and acts as a complete barrier to exports from this country.

Certainly, the Canadian Government, if it is going to permit the continued unrestricted exploitation of Canada's pulpwood resources for the benefit of the American paper manufacturers ought to require as a "quid pro quo" the opening of the American market to the free entry of all finished commodities derived from pulpwood. Such a solution of the difficulty would be of advantage to Canada, even though it would be without effect as a measure of forest conservation.

Limitations of time and a desire not to trespass on your patience, necessarily restrict this discussion of the pulpwood situation to narrow limits, but the Canadian Pulp and Paper Association has gone into the subject very thoroughly and has published a printed statement thereon, of which they will be glad to send a copy to anyone seriously interested.

In conclusion, let me say that the pulp and paper industry is convinced that a great deal of popular education is necessary in Canada, before anything like a rational forestry policy can be evolved. The people have got to be aroused to a knowledge of the importance and value of their forest possessions, to a realization that they are being exploited beyond the dictates of reason and prudence, and that steps must be taken, and that very soon, to conserve and restore them, if we would escape what threatens to become a national calamity. Anything that you gentlemen or the Canadian Manufacturers' Association can contribute to that end, will be well worth-while and will redound to the country's advantage.

RIORDON COMPANY LIVES

We are indebted to the "Financial Times" for the following summary of the Riordon situation as it is at present.

The full significance of the announcement in regard to an adjustment of the original arrangement made with the 8 per cent. bond holders of the Riordon Company, Limited, does not seem to have been generally appreciated. The modification in the payment of arrears of interest, which will bring $1,500,000 additional working capital to the company, removed the final obstacle to the carrying out of the reorganization and The Financial Times is informed that a definite announcement that the new plan has gone through will be made shortly, and will go into effect early in the coming month. This means that any possibility of the company passing into the hands of the bond holders and being broken up has been prevented; the whole organization will not be carried on as a unit; and important developments take place in two directions.

The payment of arrears in second preferred stock in place of cash as agreed to by the 8 per cent. bond holders will increase the working capital of the company to $6,000,000.

This is an amount sufficient to enable it to carry on its woods operations for the coming winter and will leave a surplus that it is understood will enable it to carry on at least the preliminary work in connection with the development of a power plant at Chelsea, six miles from Ottawa. Already the financing of this Chelsea power scheme had been made possible by an offer of financial houses but this offer may not be accepted and the company instead may await better financial conditions and decide to carry on the earlier operations out of its own resources.

In any case the Chelsea Power development promises to be an important addition to the earning power of Riordon, and in time should provide a value for the second preferred stock just as the operations of the pulp mills at Kipawa and Hawkesbury should make it possible for dividend payments to be made on the first preferred securities as well as to cover all bond interest requirements and depreciation.

The plants at the present time are working to capacity in the production of bleached sulphite pulp and it is learned their output was even oversold during the past month. It is quite true that the bleached sulphite pulp market has been injured for Canadian mills by the serious competition from Europe induced by unfortunate financial conditions that existed among the mills there and forced many of them to liquidate their stocks both old and new in order to satisfy the demands of the banks to which they were indebted. This condition, however, should improve gradually and the undoubtedly superior quality of Riordon pulp should prove a valuable asset to it when it is able to operate with a large part of the overburden of carrying charges eliminated under the present reorganization.

It is learned that the arrangement that has been recommended by the 8 per cent. bondholders provides not only for the payment of arrears of interest in the form of preference stock, that is, the second preferred of the new company but also covers in the same manner interest due up to June 1, 1924. This would require a payment of $258 cash for each $1,000 bond but under the new arrangement will enable the Riordon Company to dispense with the payment of interest for five months of next year.

As soon as this plan has been ratified by the bond holders—which is taken now for granted—a formal declaration will be made by the reorganization management that the new plan shall be in effect on December 6th next. The amount of the first mortgage and refunding 8 per cent. bonds is $5,930,000.

It is learned that the Gatineau Power development is estimated to have the same capacity as the Laurentide Power. Whatever plans are made formally for financing the "Gatineau Power Company", (the name under which the development will take place,) the common stock will be held by the Riordon Company.

Five minutes spent in the companionship of Christ every morning — aye, two minutes, if it is face to face and heart to heart — will change the whole day, will make every thought and feeling different, will enable you to do things for His sake that you would not have done for your own sake, or for any one's sake. — Henry Drummond.

The Forestry Problem of Ontario

C. D. HOWE

Delivered at the Meeting of the Ontario Associated
Boards of Trade, Hamilton, November 15, 1923

It may be that I come to you under the label of a university professor, and, while not denying the allegation, I hasten to add that I am a student as well, a seeker after knowledge. For many years I have been seeking the answer to a certain question concerning the action of men. I am sure that I have come at last to the right place. You are all men of affairs. In fact, you represent the apex of business success in this Province You represent industries that build the foundations of our country's prosperity. Our country's prosperity! how significant the expression; the controlling motive of all our activities, whether business men or university professors.

One of the questions I would like to ask is this: Do you attribute your success in business to the fact that you have profited by experience? Has not experience, acquired by yourselves or learned from others, been your own best and most successful guide and the chief factor in your success. I perceive that you all acknowledge this. Now I shall put the question that has bothered me for so many years. In your business you act as individuals or as associations of individuals. In such relations you can and do learn by experience. Why, then, do you, so often fail lamentably to learn from experience of others when you band yourselves together into associations for the purposes of self government? Why do you as a government try things that have been tried many times before by other governments and found to be failures; why do you allow yourselves as elements of a government to drift into policies that are detrimental and often disastrous to the well-being of the state, policies that the experiences of other states demonstrate must eventually be abandoned and recuperative measures established at great cost to tax payers? In other words, why do you do things in the name of government that you would never think of doing in business?

Illustrations of what I mean in the first instance, must readily come to your minds, such as, for example, the periodic attempts to stimulate the purchasing power of the money by inflating the currency; to throw open the products of the industries to the competition of those from wealthier and more highly industrialized nations as well as the attempts to regulate by law the religion or morals of a community, and sometimes even to legislate what it shall eat and drink.

Such measures have been tried repeatedly in the development of nations; some of the experiments go back to a hoary antiquity and they have proven more or less futile, if not dangerous to the best interests of the state, and yet such questions keep cropping up because people in their governmental functions do not heed the lessons of history.

Examples of what I mean in the second reference above are just as striking and usually more disastrous in the long run, as for illustration, the treatment which the people as factors of government hand out to their natural resources. Practically all industrial nations first impoverish and then rebuild at great cost the wealth-produceing powers of nature as manifested in the field, in the forest and in the flowing water. One nation learns little or nothing in this respect from the experience of the other. Indeed, within the same country, the hardwon lessons of one generation may not be accepted by the next.

The soil, for example, is first mined to the point of exhaustion and then built up again by expensive and tedious systems of cultivation. This has already been accomplished in the East and the process is being repeated in the West. To be more specific, this has been done in Old Ontario and the process is being repeated in New Ontario. You as members of a self-governing community are responsible. Do you follow a similar policy in your own business?

Our forefathers cleared away the forest and tried to farm a certain class of soils fit only for the growing of trees. You now have several hundred thousand acres of neglected and abandoned land in Southern Ontario as the result. You are just beginning to restore the forest to such areas at great cost. In spite of the teaching of experience, you as integral parts of a government are carrying on the initial stages of the same process in Northern Ontario.

As you know, in the past one hundred years a good many commissions have been appointed to investigate some phase of public land administration. The average in Ontario, I believe, is one in twelve years. The reports of nearly all these commissions emphasize in some form or other the advisability of soil classification. This was a strong point in Lord Durham's report of 1839, as well as in the reports of the commissions of 1854, 1859, 1863, 1892 and 1897. So far as I am aware, none of these recommendations were ever incorporated into a government policy; yet the segregation of and demarcation of land unfit for farming purposes is as fundamental in agriculture as in forestry. It would not only obviate the tragedy of wasted effort, but would ameliorate some important social problems connected with the occupants of unproductive farms.

I ask you, successful business men, why is it that as component parts of the government and the potential moulders of governmental policy you cannot accept and profit by the lessons of history?

We are often referred to the remarkable accomplishments of Germany and France, in putting their forests on the basis of continuous production, but we are not told that they first destroyed their forests. Germany destroyed three quarters of her forests and France four fifths of hers before they began the expensive and tedious process of rebuilding. Great Britain destroyed 95 per cent of her forests and recently appropriated, in addition to her tremendous financial burdens, the sum of $15,000,000 for the first ten year period of forest reconstruction. Coming nearer home, we find the United States have already destroyed 40 per cent of their forest area. Sixty per cent of the remaining virgin forest has been cut-over or burned. The areas burned to barrenness are equal in extent to all the forest land in Ontario south of the National Transcontinental Railway. To say nothing of destruction by fires, the annual cut of timber in the United States is stated to be four times greater than the amount of annual growth.

Michigan has in her day sold beyond her borders an amount of timber equivalent to 25 years' supply for the whole of Canada. At present she imports an amount greater than Ontario's annual cut of saw timber and pays $15,000,000 a year freight on it.

Unless you as potential moulders of the governmental policy, take decided and vigorous action soon, there is no reason to suppose that our forest history will differ materially from that of Michigan and other adjacent states. Thus far you have given little or no attention to the lessons of history. You are travelling down the same road. It would be, indeed, more expressive and nearer the truth to say that you are on the same toboggan slide.

You as citizens of this fair province are allowing close to 500,000 acres of forest land to be burned each year, or at least that has been the average for the past six years, since accurate records have been kept. It has been stated on the best authority that the white pine area has been reduced from 30 million acres to 15 million acres. I mean 15 million acres represents the area on which any white pine of any size at all may be found. I don't mean that three are 15 million acres of commercial white pine remaining.

If you consult the statistics of production of pine timber in Ontario, you will find some startling facts. For example, the official records show that we are cutting one third less pine than 25 years ago and that means a half billion feet less. You know, the Provincial government levies a tax on all timber cut on Crown lands. The present tax on pine is $2.50 per thousand feet and the average amount collected in this manner for the past few years is a half million dollars.

If the rate of cutting had been maintained from that of 25 years ago, we would have had another half billion feet of pine on which to levy a tax and at the present rate it would yield one and a quarter million dollars. Therefore, it seems fair to say that our decreasing production of pine timber, undoubtedly the result of ravages by fire, is already costing us over a million dollars a year in reduction of public revenue. This is the revenue from the timber tax alone and does not include the market value of the timber itself. Pine stumpage sells today from $10 to $20 per thousand feet, according to quality and logging conditions. If we take the lowest price and apply it to that half billion feet deficiency of pine in our markets today, we have a stumpage value of $5,000,000. That is the deficiency value of the raw material and, as you know, it would be increased many-fold before it reached the ultimate consumers as manufactured products. You see, we are beginning to feel quite seriously in terms of dividends and wages, the decreasing supply of pine in Ontario.

Notwithstanding all this, in the aggregate we still have a great deal of virgin pine in Ontario. The amount is variously estimated from 6 billion to 10 billion feet, 20 to 30 years' supply at the present rate of cutting. The last statement, however, might give a misleading impression. For all practical purposes, the supply will be exhausted long before the end is actually reached. In fact, even today there are only three places in Ontario where there are considerable amounts of pine in compact bodies offering fair logging chances. It is principally because of the high cost of logging in remote districts and the high cost of transportation of the sawn lumber long distances to the markets that you have practically ceased to use white pine as building material. You use instead lumber from the Southern States and in buying it you pay the wages of workmen in a foreign country instead of your fellow countrymen to whom you might sell your products in greater quantity. — Ed. Or you may use lumber from British Columbia and on every thousand feet of it you pay from $12 to $20 freight charges, depending upon whether it comes by rail or part of the way by water. You are importing lumber over 3,000 miles when you have thousands and thousands of acres of former pineries lying idle within less than a hundred miles from Hamilton, Toronto and London. These areas once occupied by luxuriant pine forests are lying idle and unproductive because you have not done your duty in directing the forest policy of the government. You are paying handsomely now for your lack of interest in such matters. And may I add, without the least touch of malice, you are getting just what you deserve.

Let me come back once more to the old growth pine. The supply is very limited and will soon be exhausted so far as practical commercial purposes are concerned. While we may look upon the passing of our magnificent pine forests with sentimental regret, sentiment plays no part in forestry because forestry is a business — the business of producing wood in marketable form for the wood-using industries. In a virgin forest there is no annual increase of wood, for as much dies each year as is produced. Life and death keep equal pace. The forest, therefore, arrives at a point where the only possible gain in withholding the axe would be the rise of stumpage value and this would be brought about by conditions operating entirely without the forest. The length of time that a forest could be held for the increased value of standing timber is also limited because of the wastage in dying trees. The leaving of mature, merchantable trees, accessible to the markets, to die a natural death would be analogous in its economic aspects to leaving a crop of wheat to the same fate.

A forest reserve of mature timber in the strict interpretation of the word within reach of the markets is an economic anomaly and should not be allowed to exist. Of course, there should be reservations for park and recreational purposes, but even they should not be too large in country nearing the exhaustion of its available supplies of timber. I am emphasizing this point, for a great many people think that the object of forestry is to lock up great stores of timber for future use. Nothing could be farther from the truth. The word forest conservation is received in much the same way by the public. This in reality means keeping the forest continuously productive; the conserving of the productive power of the forest. Continuous production is one of the fundamental principles of forestry.

The forester endeavors to keep enough of the forest capital intact, so that the dividend creating power, the annual interest, as represented by the yearly increase in growth, may continue to function. You business men will have no difficulty in understanding that, for you work on the same principle. You endeavor to keep your capital intact, so that you can have future dividends. The forester endeavors to keep the forest capital intact, so that there may be future wood dividends of commercial species. One of your principal satisfactions is to make your capital grow, so that your dividends will grow. A forester has the same impulses. He does this by directing and improving the forces of natures in the forest. He can make 40 cords of pulpwood grow on an acre, where nature unaided would produce only 5 or 10 cords. He can direct the growth of a stand of trees, so that it will produce 10,000 feet of first class saw logs, where nature left alone would produce only a thousand feet.

Getting Shabby Treatment

I have again wandered away from the virgin pine forests so let me return to consider them further. The exhaustion of the supply is only a matter of a comparatively few years, and it is entirely justified from the standpoint of economic considerations. What, then of the future? Have we other supplies of pine coming on as represented by forests of younger age classes? There are two classes of conditions where the cut over areas which have not been burned and on the burned areas. Let us examine conditions in each of these. In the first place, let me mention another fundamental principle in forestry, that is, the provision for the future crop. A forester does not cut all the trees on an area until he has established the young growth or is at least sure that he can do so. In most cases he can do this with the aid of nature by the judicious use of the axe, without recourse to artificial planting. The virgin white pine in Ontario has been cut and is still being cut with no conscious attempt to procure the re-growth and hence there is practically none. The young trees, if they started at all, have been crowded out and killed by the growth of inferior trees or shrubs.

It happens, however, that white pine often regenerates itself abundantly after a single burning. In the aggregate we have very extensive areas of old burns covered with a good re-growth of white pine. We don't know how extensive they are, but the government is finding out as fast as it can through its forest surveys. There are probably in Southern Ontario close to one million acres of old burns restocking to young pine in potentially commercial quantities. This is very significant from the standpoint of future supplies, but what is happening to these young pine forests?

Let me tell you some of the things that are happening. In 1897 a Royal Commission was appointed "to investigate and report on the subject of restoring and preserving the growth of white pine and other timber trees upon lands in the Province which are not adapted for agricultural purposes or settlement." The Commission traveled for several months through the cut-over and burned-over pine lands in central Ontario and as far west as the Rainy River district. They were much impressed by what they saw from the standpoint of young pine forests and they concluded there were sufficient supplies of this material to meet all future requirements if it were adequately protected from fire. One of the members spent two weeks investigating conditions in four townships and he reported that they would average to carry 400 young pine trees to the acre. He estimated their value in 50 years at the then current prices, which were one half the present value of white pine stumpage, would be $20,000,000. Twenty-five years later those same townships were included in a survey carried on by the Provincial government, and the greater part of the area had less than 5 trees on one acre. Cause? Repeated forest fires.

The Ontario Forestry Branch recently made a survey of the forest conditions on 6,500,000 acres of former pineries in Central Ontario. They found that 4,000,000 acres had been burned. Of these 4,000,000 acres, a little less than 1,000,000 acres contained young pine trees in potentially commercial quantities, while one half the area, or 2,000,000 acres, had been so severely burned by repeated fires that it contained no softwood growth of any kind — only scrub poplar. That is the way your future pine forests are being treated. We don't know exactly, but it is probably safe to say that 12,000,000 to 15,000,000 acres of former pineries have been burned in Ontario. And they are still being burned! The official records show that areas bearing young second growth, presumbly mostly pine, are being burned at the rate of 200,000 acres a year.

Where the Blame Belongs

I have just one comment to make about forest fires. Ninety per cent of them are caused by human carelessness. Don't put too much blame on the government. The most efficient organization cannot cope successfully with the situation, when the public has that attitude towards its forests. Put the blame where it belongs. The people in the long run get what they demand of their legislators.

Thus I have presented to you the history of the public's treatment of their pine forests in Ontario. The white pine is being crowded out of the unburned areas by inferior trees; the young growth is being rapidly swept away in flames. If you, as component parts of the government, maintain your present indifference and these two processes continue, the white pine forest will in time cease to exist as an important commercial factor in Ontario. And these very forests in the past one hundred years have contributed more to Ontario's wealth and prosperity than any other factor except agriculture, and, indeed, they made agriculture possible throughout the greater portion of Old Ontario, just as spruce for pulpwood is making agricultural settlement on a large scale possible in Northern Ontario today.

Cheaper to Keep than Rebuild

I have taken white pine as an illustration of what is going on in your forests because it has been exploited longer and is therefore farther along the road to destruction. The same processes, however, are taking place in the publicly owned spruce forests upon which our pulp and paper industries at present depend. The re-growth of spruce after logging is being supplanted by the inferior balsam. Spruce is at a disadvantage also on the burned areas, for it does not reproduce as readily under such conditions as its inferior associates.

Assuming that one in five of the population of Ontario is an adult male, then each of you owns about 170 acres of Crown land forest south of the National Transcontinental railway. You see what is happening to your woodlot. Over one half of it has been burned. It will be burned again, and with each burning the quality of the soil will deteriorate and consequently the tree growth will be poorer. If the unburned portion is virgin timber, it is standing still or deteriorating in quality. Most likely the latter condition prevails. If the unburned portion has been logged, the new forest coming in is chiefly composed of species of lower commercial value. These conditions are in large part preventable and have been brought about through your neglect. It is as certain as anything in this world that if you continue this neglect the large lumber business and the great pulp and paper industries will be very seriously crippled. These industries have an invested capital totalling more than $200,000,000. They employ about 40,000 people in the woods and in the mills and distribute to them in the neighborhood of $60,000,000 each year in wages. They pay more in direct revenue to the government than any other business in the Province. Is it not a sound business policy to keep these industries a-going?

There is only one forestry problem in Ontario and that is to keep our forests continuously productive in terms of the more useful and valuable species through the application of human intelligence in directing the creative and growing powers of soil and sunshine in our woodland areas. We can manage the forests which nature has given us free of charge much more cheaply than we can destroy and rebuild. For example, we have at least three million acres of young forests of commercial species, perhaps more, in Ontario, young forests well stocked with trees from 2 inches up to 6 and 8 inches in diameter. We can give them adequate fire protection for 4 cents an acre per year. That would be $1.00 per acre in 25 years. We could spend a little more per acre each year in using intelligence to improve the stand and thus increase materially the final yield as well as shorten the periods of harvest. We can do this or we can burn down these young forests and build new ones by artificial planting at a cost of $15 to $20 an acre and then wait 25 or 30 years, possibly 40 to 50 years, for the crop to mature and all the while we will have to protect them from fire as well. Which of these two courses appeals the more strongly to you as business men? You, as representatives of the government, are drifting into the latter, largely, it seems, because it is the line of least resistance. Do you display a similar attitude toward your private business?

I believe thoroughly in artificial reforestation. I believe it is sound as a government policy and as a private investment in the older portions of Ontario where adequate fire protection is assured. I believe just as strongly, however, that our main forestry problem is in the forests that are already created and are well on their way toward maturity. The planting of forests should be only supplemental to the main source of supply which is nature's forest. Any other policy would eventually end in disappointment and disaster to the state. I am bearing down hard on this point because the public has a wrong conception of this matter, largely fostered by the newspapers. They think if a tree is planted for each one cut, the problem of future supply is solved. France and Germany thought the same thing 100 years ago. They tried it and finally abandoned it, as a government policy. Those wonderful forests which are yielding such good dividends on the investment are not all artificially planted forests. In fact, the greater part of them are natural forests and the re-growth is brought about by human intelligence regulating the cutting methods. The planted forests play a subsidiary part in the general program. They are employed only when natural regeneration fails. And, moreover, when the planted forests are mature and ready for the harvest, they are not as a rule cut clean and artificially replanted, but the new growth is obtained by natural seeding through the regulation of the cutting.

I wish you would ponder upon these facts when you finally assert yourselves and create a forestry policy for the Province of Ontario. Another thing I wish you would remember when that day comes: Forestry is the business of producing the best quality of the most useful woods for the market. Don't be content to take what nature unaided may give you. White pine surpasses all other woods in adaptability to its trade uses. It will always be high priced for that reason. Make it a part of your government policy to restore and maintain its former importance in our lumber trade. The fiber of spruce surpasses all others in its adaptability to pulp and paper purposes. It will always be high priced for that reason. Make it a part of your government policy to maintain its importance in the forest. Of course, we can get along with inferior materials. We can build our houses of poles and slats. If we do, it will be an expression of your business ability. We can use what nature undirected gives us for pulp and paper materials. We can use jack pine and poplar, and when they are gone we can use straw. We might even use potato skins, but if we do, it will measure your business ability as managers of your 170-acre share in Ontario's forests.

The point I wish to enforce is that we are really coming to these things unless the handling of our forests on the basis of continuous production begins at once. It takes time to transform nature's low yield forest to man's high yield forest. In fact, we should have begun 10 or 15 years ago. Even now, there will be a serious exhaustion of the supply from the time that the virgin supplies give out to the time that the young stands already existing reach maturity. The gap can be bridged only by an aggressive and sustained policy of recuperation, a policy that will express itself in more intensive fire protection and in the institution of cutting methods that will be followed by natural re-growth of the commercial species. Obviously, these methods can be developed only slowly as experience and economic conditions dictate. There is nothing drastic or revolutionary about forestry. It is simply the application of common sense and business principles in the interest of the state to the purpose of continuous production of commercial wood products.

There is just one more point to which I wish to call your attention. Some misguided people talk about curtailing our forest production, whereas we could and should double, treble and quadruple it. We have increased our agricultural production enormously and we can do the same with our forest production by the application of like intelligence and aggressiveness. Experience in European countries demonstrates that the treating of the forest as a crop and not as a mine increases forest production from 3- to 10-fold over nature's unaided efforts. We are in the markets of the world with our agricultural products, why not with our forest products?

You know, the question of taxation is becoming more serious every year. We are rapidly exhausting our ingenuity in devising new methods of levying taxes and new sources of revenue. Yet the expenses of government will increase as time goes on. It can all end only disastrously to the State unless you as active directors of government policy take a long time, patriotic view of the matter and back it up with sustained effort. For example, you could make the forests, at present the second largest source of revenue, contribute a greater share than now toward offsetting the current expenditure. A forest, unlike a mine, is a restorable resource, it responds to protection and intelligent direction as readily as a child or a garden. Our own particular forest is yielding us an income of $1,100,000, a large sum very gratefully received, but it pays only about one tenth the current expenditure of the government. In spite of the enormous areas already made barren by fire, the virgin forest that remains and the young stands of commercial trees already established by nature free of charge could in time be made to produce for all time a revenue equal to at least one half the present annual cost of running the government. I have not said how many years it would take. It could, however, be accomplished in a comparatively short time in the life of nations. Most of you would live to see it, and that is near enough to make it an object of attainment. This is not idealistic; it is not visionary. It would be simply profiting by the lessons of history, by the experiences of other countries. It could be quite easily accomplished if you gave to governmental business only a portion of that energy and intelligent thought that you give to your own business. After all, you would be only helping yourselves, for the country's prosperity is your prosperity; your prosperity is the country's prosperity. It is a wonderful circle. Forest devastation and the absence of an intelligent and sustained effort in forest recuperation can and will break the continuity.

THEY PULLED BILL'S TEETH

In an address in Montreal last week, Hon. Hugh Guthrie, former Minister of Militia, made reference to the important position of pulp and paper among the exports of Canadian goods. He said, that while exports over imports were $92,000,000, of this amount $[illegible] was made up of pulp wood and paper. Thirty-one per cent. of the pulp wood cut went to the United States, for $16,000,000, whereas if it had been made into pulp in Canada it would have brought $56,000,000, and if made into paper it would have brought $105,000,000.

After a bill had been passed to stop the exportation of pulp, the Government had secretly passed an order-in-council holding off action on the matter for ten years, allowing American mill owners to get out all the Canadian lumber they wanted in that period, it was asserted.

The many friends of T. J. Keenan, formerly secretary of T. A. P. P. I. and editor of "Paper" will be sorry to hear that he met with a painful accident recently, being run down by a heavy motor truck. He is now about once more, but it is not safe to nudge him in the ribs.

How much wiser would we be if we could view life from the vantage point that we will occupy when our years are spent. How many mistakes we would avoid!

What right have we to ask missionaries to go to distant lands to serve Christ if we do not support them with a sacrificial spirit equal to theirs?

NO APOLOGY FOR POLICY OF PROTECTION

In addressing a meeting of the executive and Ontario members of the Canadian Manufacturers' Association in Toronto last Thursday, President C. Howard Smith said:

"I have no apology to make for believing in protection for Canadian industry and labor. One only has to look at the results that have been achieved in Canada since she adopted the protective policy, to see that such a policy is the right one for this country."

"In addition to this, one has only to look at the tremendous strides made by the United States. For over 130 years the United States has pursued a protective policy for her industries and her labor, and has succeeded in developing the most prosperous nation on the face of the earth today, and at a time when Canada is clamoring for immigrants and population the United States have 'put up the bars,' and only allow a select few in, and we see the spectacle of ocean steamships racing across the Atlantic so that they can get their quota in. The United States is truly "the promised land' for the immigrants and they are all struggling to reach it."

Speaking in regard to the British preference, Mr. Smith said:

"We are confronted with a tremendous increase in the imports of goods from Great Britain, which, owing to their low cost of labor, our manufacturers are unable to compete against. I do not see that it is to the benefit of the British Empire or to the benefit of Canada, that we should transfer some of the 2,000,000 unemployed in Great Britain to Canada, and while I am a believer in the preferential tariff, I consider it should be on such a basis that it will not put our working people out of employment."

As to the effect of a proposed policy of protective tariff on the farmers of Canada, Mr. Smith said:

"It must be remembered that about 80 per cent. of all farm products of Canada is consumed in this country, and only about 20 per cent. is exported. If we can increase our industrial population and increase cities and places in the West, whereby a large amount of his product can be consumed, the farmer, in common with other producers, will receive a share of the profits."

In conclusion the president declared: "Over 60 countries, including all the industrial countries, have increased their tariff since the war. Is it realized that Canada is the only country that has reduced her tariff? How can she run counter to these countries? It is high time that she 'about-faced' on this policy of reducing the Canadian tariff, and if people would only study this question of the tariff from the viewpoint of what is best for this country. I do not think it would be long before we have a tariff policy in effect which will send Canada on to prosperity, and raise her out of the slough of despond in which she is foundering at present."

What right have we to call ourselves Christians if we do not lend our prayers and gifts and lives to carry out the program of Christianity?

Get Kellogg's new Book! "Pulpwood and Wood Pulp."

British Trade News

From our London Correspondent

London, Nov. 24, 1923. The British Parliament has appealed to the country on the question of Protection and the dissolution was carried out a week ago. The election cry now is "Trade within the Empire" and put an import duty on "Goods coming into the United Kingdom from foreign countries which compete with British industries and undersell them in their products." If the electors say "yes" and vote for Protection, the result will mean that Scandinavian, Finnish, German, American and Austrian paper of all kinds, including boards, will have a tariff of a high nature placed on the output of these countries and it will be a stimulus to the Canadian imports. Most of the British papermakers are welcoming Protection. It should have been introduced years ago. Premier Baldwin is connected with a big steel and iron works and he knows from experience how his own industry has suffered from foreign tactics. If Protection comes the outlook for Canada here will be good.

Norwegian Trouble

News has reached London that the Norwegian pulp and paper mills are being seriously hit by the strike of workers. So far no settlement is in sight and there is talk of the Government intervening in order to bring the present state of things to a close.

Pulp Market

The pulp market in the United Kingdom is unchanged since my last report and prices remain the same. Reports from Scandinavian sources show that business there is also dull.

Finnish Experiments

I learn that at the Sulphite Mill of G. A. Serlachius, A. B., Mantta, trials have recently been made of a method invented by Mr. Alfthan, for the purpose of making use of pinewood as raw material in the manufacture of sulphite. This method seems to promise well for the future. Cellulose has already been manufactured by this new method to such an extent that satisfactory experience has been attained with regard to quality and practical uses of the product. This pine cellubosa is specially remarkable for its white colour, and it is said that same does not in any way differ disadvantageously as regards quality from pulp made of spruce.

At Aanekoski Paper Mill a new apparatus for regulating the supply of kaolin to the pulp passing through the paper machine has been in use for about 1½ years. Besides resulting in various improvements as regards the quality of the paper, the important advantage is gained that only 7½ per cent. of the quantity of kaolin in use is lost, whereas with all other apparatus hitherto in use this loss has amounted to 40-60 per cent. The new method has been tried on a newsprint paper machine with success.

Mr. C. D'Oyley Mears Dead

The British paper industry has lost a well-known and widely-respected member by the death of Mr. C. D'Oyley Mears, who had long been in ill-health and recently relinquished his interest in the firm of C. D'Oyley Mears & Co., of Wardrobe Chambers, Queen Victoria St., Mr. Mears, who was 78 years of age, was one of the earliest men in the trade to identify himself with the use of wood pulp, which was successfully used as the principal raw material at the Ilford Paper Mills, where he was then manager. His work at Ilford led to his appointment as manager of the Northfleet Paper Mills, but the increasing demand for his services as a Wood pulp expert and arbitrator resulted in Mr. Mears establishing himself in that capacity in London some thirty years ago. For over twenty years his firm acted as London agents for the "Daily Telegraph" Paper Mills at Dartford. For more than a quarter of a century Mr. Mears was associated with the British Wood Pulp Association, and in recognition of his services as Hon. secretary over a long period he was made an honorary vice-president.

CANADIAN PRODUCTION GAINS ON U. S.

Figures compiled by the Newsprint Service Bureau for October show that the production of Canadian newsprint mills again established a new high record of 114,475 tons compared with the previous record of 113,584 tons in August of this year. The month of October also saw a new high record in the shipments of newsprint from Canadian mills, the total being 112,996 as compared with the previous high record of 112,818 made also in August.

Counting actual working days during the month the October daily average was slightly below that of September, the totals comparing as 4,240 and 4,270, while the average for August was 4,207 tons daily. The October average was 419 tons a day ahead of that of January and 420 tons ahead of February. For every month since April inclusive the Canadian mills have been running over 100 per cent. of their rated capacity.

The total production for the ten months to the end of October this year was 1,055,386 tons, compared with 892,100 tons last year, an increase of 163,286 tons or 18 per cent. It is noteworthy that a record kept for the year of about 85 per cent. of the United States newsprint mills showed an increase in the ten months of only 52.813 tons over last year or 5 per cent., while the Canadian mills increased over three times that, or 18 per cent.

Another noteworthy point in connection with the production of the two countries is that during the month of October all the United States mills together produced only 7,598 tons more than the combined Canadian newsprint mills, the figures comparing as 122,073 to 114,475. Canadian production has now reached a point where it is almost 94 per cent. of that of the United States mills as compared with less than 30 per cent. a few years ago. Thus, of the total production of the two countries during October, Canadian mills produced 48.3 per cent. and the United States mills 51.7 per cent. In much less than two years Canadian production should pass that of the United States.

The daily average of the Canadian mills for the ten months of the present year was 4,091 tons as compared with 3.471 tons for the corresponding period of last year, or an increase of 620 tons daily. In the case of the United States mills, again taking in about 85 per cent. of the total, the daily average has been falling off while Canada's has been increasing the former showing a high average of 4,571 tons during June and only 3,864 during October, a decline per day of over 700 tons. The average daily production of all the United States mills was 4,521 tons or only 281 tons daily ahead of the average of the Canadian mills for the past month.

NOTE ON SIZING

By C. GUERITEY

Translated from La Papeterie xlv, 834,837, Sept. 10, 1923, by A. Papineau Couture)

Sizing is a rather delicate chemical operation, and it requires to be closely and continuously watched, for there are many pitfalls, and it is quite disconcerting to see the ease with which numerous and varied causes may come into play to prevent proper sizing.

Though it may seem that the process has been well developed and perfected, that definite amounts of chemicals are brought into play, and that the chemical reactions involved are known, yet quite frequently peculiar anomalies crop up and defective sizing is produced.

As I have been constantly running up against these difficulties in a writing paper mill, I shall relate part of my investigations and the conclusions which I have drawn from them.

Rosin sizing involves the following operations:

A certain amount of aluminium sulphate solution is first added to the well mixed stock in the beater. After it has been evenly distributed throughout the mass of pulp, the size milk, consisting of a solution of sodium resinate containing free rosin in a colloidal state, is added. Finally, more alum solution is added to the beater.

Two main reactions are involved in the process:
First, the alum reacts with the alkaline-earth bicarbonates in the water according to the equation

$$Al_2(SO_4)_3+3Cah_2(CO_3)_2=Al_2(OH)_6+3CaSO_4+6CO_2$$

Second, the alum reacts with the sodium resinate.

In the presence of the alkaline-earth bicarbonates the alum, which contains about 30 per cent of alumina, is precipitated as aluminium hydrate, which contains 80 per cent of alumina. The above equation gives the data required for calculating the amount of alum which must be added on account of the temporary hardness of the water.

In the cooking of rosin, the latter behaves like a mixture of organic acids and displaces the carbon dioxide from the soda ash with formation of sodium resinate. Conversely, the atmospheric carbon dioxide can reprecipitate free resin from a solution of sodium resinate. With very concentrated rosin soap solutions the amount of rosin dissolved can be practically equal to the amount of combined rosin. On diluting this solution with water, the free rosin is thrown out of solution and forms a white, milky emulsion, which is the form in which the size is added to the beater.

If to a given amount of rosin soap we add increasing amounts of aluminium sulphate solution, on letting the solution stand for a little while to give the precipitates a chance of settling out, it will be seen that the volumes of the various precipitates are quite different. These precipitates consist of a mixture of free resin and of basic aluminium resinate. The amount of free resin was determined by drying the precipitate at 90 deg. C., extracting with 85 per cent alcohol, evaporating the alcohol, drying the residue at 80 deg. C., and weighing it. The alumina was determined in the insoluble residue by ashing in a platinum crucible and weighing the residue. The proportion of free resin increased with the amount of aluminium sulphate used, as shown in the following table:

Grams of $Al_2(SO_4)_3$ per 100 g. of sodium resinate	Free Rosin %	Aluminium %
50	31	3.8
100	32.5	4.1
200	34	4.2
400	41	5.25

It will be noticed that the increase in the aluminium content is approximately proportional to the increase in free rosin content.

Temperature has a considerable influence on the volume of the precipitates, which varies inversely with the temperature.

In the paper mill, the amount of alum used is always greater than what is theoretically required. At first there is formed aluminium resinate, which is subsequently decomposed by the excess alum into free rosin, and basic aluminium resinate, and finally there remains but the free rosin in the finished paper. This assertion can readily be proved experimentally. Suppose we take a paper sized with 2 to 6 per cent of rosin, and ash it before and after extracting with ether. The ash will be found to be practically the same in both cases, showing that there is not more than the merest trace of aluminium resinate, if any. Or again, the free rosin is first extracted from the paper with 85 per cent alcohol, which does not dissolve out the aluminium resinate, and the latter can then be extracted with ether if it is present.

The following procedure gives good results: First add the size to the stock in the beater, and, almost immediately after, a definite amount of dilute sulphuric acid which will decompose part of the rosin soap, adding just sufficient acid to give a neutral reaction in the beater, or if anything just a shade on the basic side. Finally, add enough sulphate of alumina to give an acid reaction, thus forming the aluminium resinate necessary for good sizing. The paper will then contain the free rosin which was present as such in the size milk and the free rosin which was precipitated from the rosin soap by the alum.

A considerable amount of the size is lost on the paper machine, the amount varying from about 20 per cent with heavy papers to about 40 per cent with light papers.

It is always difficult to determine exactly the amount of alum required for sizing. It is necessary that the stock should have an acid reaction as it comes on the machine wire; but if it is too acid there will remain traces of acid in the finished paper, which will ultimately destroy the sizing. Enough alum must be added to:

1) Precipitate the alkaline-earth salts (calcium and magnesium bicarbonates);

2) Precipitate the combined rosin and form an aluminium resinate;

3) Make the stock acid to litmus paper.

In certain cases this theoretical amount of alum does not give good sizing qualities; and then the composition of the pulps used must be carefully investigated, for they may contain lime salts in amounts which may be as high as 2 or 3 per cent. An additional amount of alum must then be added to decompose these compounds. The amount of lime present is easily determined by titrating the pulp with decinormal hydrochloric acid, using methyl orange as indicator, or by adding an excess of decinormal acid and titrating the excess with decinormal soda.

Causes of Poor Sizing

The following are the principal causes which I have investigated:

1) Hardness of the water, and more particularly a high calcium bicarbonate content. This is easily overcome with modern water purification methods. The paper mills in the neighborhood of Paris size without any trouble, though they sometimes have water with 45 deg. to 50 deg. of hardness.

2) Presence of lime salts in bleached and unbleached chemical pulps (due to improper washing of the pulp);

3) Nature of the furnish. Broke should be watched very carefully, as it frequently contains fillers such as calcium carbonate, calcium sulphate, etc., which can react with the size.

4) Presence of chlorine in certain bleached pulps

5) Grades of rosin used. Some grades are quite dull, hard to dissolve, and do not form a good soap.

6) Method of adding the size. It is preferable to size the stock at a high consistency, as it then retains the size better, and large quantities of water can be subsequently added without danger of losing the size.

7) Drying conditions. Drying is of vital importance to the quality of the sizing of the finished paper. It should be conducted so as to give a chance to the rosin to fuse or sinter together while the sheet still contains a certain amount of water, thus forming a continuous coating or varnish over the fibers. If the drying temperature is too high, the rosin will be "burnt" and will not form a continuous film over the fiber; while if the temperature is too low the particles of rosin will not fuse together.

8) Composition of the inks. Certain inks have an acid reaction and contain free acids such as hydrochloric or acetic acid. The deterioration of the sizing is attributed especially to the action of hydrochloric acid and of sodium chloride. Alkaline inks are just as bad.

9) Temperature and hygrometric conditions of the surrounding atmosphere.

N. B. — Chlorides have a particularly disastrous effect on sizing. Calcium chloride, which may be present in improperly washed bleached pulp, probably has the same action on rosin soap as on ordinary soaps. It is therefore extremely important to remove all traces of chlorine after bleaching. This can be done by a thorough washing, or, better still, by the use of an antichlor such as sodium bi-sulphite which will eliminate all danger of trouble from this source during sizing or subsequently.

PAPER LOSS IN TOKYO

According to the investigation carried out by the Japan Bleaching Powder Association the total losses of paper in Tokyo wrought by the recent fire are as follows:

	Quantity		Value
News	3.500.000 lbs.		yen 5,900,000’
Printing . . .	1.500.000	(domestic imported	1.200.000 lbs., 300.000 lbs.)
Pulp	2.250.000	yen	1.500.000
Japanese paper		yen	800.000

The reason of a heavy loss sustained in news is due to the contract which stipulates that the suppliers should keep at least one month consumption in stock. The estimation of loss was made out to be yen 10 million, but due to the out of season the loss is not so heavy as speculated. Should the disaster happen one month later, the possible loss would have been greater as the season sets in then.

Including both news and printing.

INVESTIGATION OF MINERAL FILLERS

The investigation of the availability of certain minerals for use as fillers, together with a study of their physical and chemical characteristics, and their adaptability to commercial uses, is being continued by the Department of the Interior, through the Bureau of Mines. The South has extensive deposits of clays, ochres, bauxite, talc, graphite, etc., and the purpose of this study is to determine their value for use as fillers in making linoleum, paper and other commercial products.

The laboratory study of the size and character of grains of non-metallic mineral fillers has been completed. The results show that these characteristics have an important bearing on the applicability of a mineral filler and the types of manufactured products in which it can be used.

Laboratory work on Georgia and Alabama white clays to determine their value for filler use has been completed. The samples investigated included 31 Georgia and 11 Alabama clays. Of the Georgia clays, 17 were selected for more extended semi-commercial tests, and 500-pound samples were sent to the Ceramic Experiment Station of the Bureau of Mines at Columbus, Ohio, for washing, pulverizing and dispatching to the manufacturers who are co-operating in the factory tests. The laboratory tests have shown that a number of the Georgia clays tested are equal or superior in quality to the imported foreign clays now largely used in the paper trade. The bureau's tests also indicate the clays are of value in rubber filling, and rubber manufacturers are being furnished with samples of the Georgia clays, to test their value in rubber compounding.

KELLOGG'S BOOK IS A CORKER

R. S. Kellogg, Secretary of the News Print Service Bureau and a recognized authority on timber, has just produced a book, "Pulpwood and Wood Pulp in North America." It is worth $4.00.

Woodlands Section

PULPWOOD EXPORTS DOWN IN OCTOBER

Pulpwood to the value of $1,078,000 was exported to the United States from Canada in October, according to a report prepared by the Dominion Bureau of Statistics. This is a decrease both in quantity and value over September figures, which show that $1,1[illegible]000 worth of pulpwood was shipped to the States, but it shows a great increase over figures for October, 1922, when only $992,000 was realized from this source. In the report it is shown that the exportation of pulpwood has jumped tremendously in the twelve months which ended with October, as compared with the preceding corresponding period. Figures for these periods are:

1,112,000 cords valued at $13,657,000 in the year which ended with October, as against 956,791 and a total value of $9,967,000 in the twelve months ending with October of 1922.

In October $4,118,000 worth of wood pulp was exported from Canada, of which $3,586,000 worth went to the United States; $351,000 worth to the United Kingdom and $179,000 worth to other countries. The total value of woodpulp exported during the year which closed with October was $47,155,000, as against $41,132,000 for the preceding corresponding period.

During the twelve-month period under review, $3,033,000 worth of paper board was exported from Canada, as compared with $2,327,000 in the preceding twelve months. It is shown that the total value of all kinds of paper products exported from Canada during the month was $8,171,000, as compared with $6,468,000 in October of 1922. The total value for the twelve months is shown to be $91,446,000, as against $72,822,000 in the year which ended with October, 1922.

BIG LUMBER CUT IN QUEBEC

The lumber operations in the province of Quebec are progressing exceedingly well with the continuation of the fine weather, is the opinion of G. C. Piché, chief forester for Quebec, and one of the biggest cuts ever recorded in the province is expected for the season of 1923-24.

In all, there will be about 30,000 men working in the various lumber camps during the winter, if the different companies obtain all the help they require. This is an increase of 5,000 over the number given about a month ago as being the total in the camps this winter. The camps themselves will number about 3,000, it was stated.

To cope with the situation, the staff of forest rangers has been increased by 50 per cent., and now numbers around 160 men, who will look after the interests of the Government and visit the camps to see that only the proper timber is cut.

It is expected that all of the 3,000 camps in the province will be visited twice a month by the forest rangers.

Send us $4. for Kellog's book.

REVIEW OF WOODLANDS LITERATURE

B-3 Spotting Fires from Lookout-Stations. E. H. FINLAYSON. **Can. For. Mag.** XVIII, No. 5 (May 1922, p. 763). The Dominion Forestry Branch has developed an intensive system of lookout towers for forest fire detection in the dry belt of British Columbia, within the railway belt. These are connected up by telephone with the Forestry Branch and Government telephone systems. The Osborne fire finder is used for the accurate location of fires, by plotting cross-line observations from two or more lookouts.-C.L.

B-9 Canada's Forestry Conditions and Problems. DR. C. D.HOWE **Can. For Mag.,** XVIII No. 5 (May, 1922, p. 765).-C.L.

B-3 Specializing in Forest Protection. PROF. W. N. MILLAR. **Can. For. Mag.** XVIII, No. 5 (May, 1922, p. 771,. Organization consists largely of a stationary staff, each member of which functions along certain definite lines.-C.L.

B-5 The Logging Tractor as a Money Saver. J. S. INNES. **Can. For. Mag.** XVIII No. 5, (May 1922, p. 784).-C.L.

B-3 Scientific Forest Protection. PROF. W. N. MILLAR. **Can. For. Mag.** XVIII No. 6 (June, 1922, p. 817). Discussion of transport, commissary, finance and accounting, intercommunication and reconnaissance, and fire suppression strategy.-C.L.

B-3 Fighting Bark-Beetles in Balsam. DR. F. C. CRAIGHEAD. **Can. For. Mag.** XVII, No's. 6 and 8 (June and August, 1922, pp. 820 and 942).-C.L.

B-9 What Rate of Interest in Growing Timber. C. H. GUISE. **Can. For. Eng.** XVIII, No. 6 (June, 1922, p. 826). Argues that four per cent compound interest is a reasonable rate in calculating costs of growing timber.

B-9 The Forests of Southeastern Labrador. E. M. KINDLE. **Can For. Mag.** No's. 6 and 7 (June and July, 1922, p. 830 and 902).-C.L.

B-2 Harvesting the Wood Crop. W. M. ROBERTSON. **Can. For. Mag.** XVIII, No. 6 (June 1922, p. 832). Describes research experiments being conducted at Bathurst Mines, N.B.-C.L.

B-5 Some Lumbering Problems. W. M. ROBERTSON. **Can For. Mag.** XVIII, No. 7 (July, 1922, 1922, 884). Advantages and disadvantages of diameter limit regulation; practical suggestions.-C.L.

B-9 The Growth of Forests for Fuel. PROF. W. N. MILLAR. **Can. For Mag.** XVIII, No. 7 (July, 1922, p. 885). Advocates extensive use of woodlots or local forest areas, close to consuming centers, for systematic production of wood fuel as a partial substitute for coal. -C.L.

B-3 Natural Regeneration of White Pine. W. G. WRIGHT. **Can. For. Mag.** XVIII No. 7. (July, 1922, p. 891). Some results of investigations at Petewawa Forest Experiment Station, Ontario.-C.L.

B-9 The Forest's Service in the Betterment of Canada. AVILA BEDARD. **Can. For. Mag.** XVIII No. 7 (July, 1922, p. 892).-C.L.

B-9 A Defence of the "Predatory Lumberman." J. E. RHODES. **Can. For. Mag.** XVIII No. 8, (Aug. 1922, p. 945). Could forest wrecking have been avoided? Was America compensated by a century of cheap construction? Private forestry must present some inducement as a business proposition, or it will never be undertaken. Planting is primarily a project for state and national governments, but scientific logging is within the reach of the present owner, with a view to protection of advance growth and the establishment of conditions favorable to natural regeneration. C.L.

B-9 High Trees not High Tariff, is Secret of Trade. DR. C. D. HOWE. **Can. For. Mag.** XVIII, No. 9 (Sept. 1922, p. 997). Canada in 75 years has thrown into the furnace a forest empire eighteen times the size of the Maritime Provinces.-C.L.

B-9 Forest Conservation. P. SWANSON. **Can. For. Mag.** XVIII, No.'s 9, 10 and 11. (Sept, Oct. and Nov., 1922, pp. 1022, 1100 and 1168). Prize winning essay contest in F. J. D. Barnjum Contest. Economic importance of our forests; damage by fire and insects; how to reduce this; embargo or export tax on freehold pulpwood.-C.L.

B-3 Controlling Forest Fires from the Air. ELLWOOD WILSON. **Can. For. Mag.** XVIII, No. 9. (Sept. 1922, p. 1032).-C.L

B-3 Improving Protection of Ontario's Forests. A. V. GILBERT. **Can. For. Mag.** XVIII, No. 10. (Oct. 1922, p. 1065).-C.L.

B-2 Communal Forests for Canadian Towns. CLYDE LEAVITT. **Can. For. Mag.** XVIII, No. 10. (Oct. 1922, p. 1072). Advocates their establishment for purposes of wood production, recreation, watershed protection, etc., Cites European examples.-C.L.

B-2 How to Plant Trees in Fall. B. R. MORTON. **Can. For. Mag.** XVIII, No. 10. (Oct. 1922, p. 1076). -C.L.

B-3 The Railways and Forest Fires. CLYDE LEAVITT. **Can. For. Mag.** XVIII, No. 10. (Oct. 1922, p. 1078). Canadian railways have greatly improved their methods of forest fire prevention and control. Regulations are prescribed by the Board of Railway Commissioners.-C.L.

B-7 A Plan to Improve Ontario's Forest Management. DR. JUDSON F. CLARKE. **Can. For. Mag.** XVIII, No. 10. (Oct. 1922, p. 1080). Recommends departmental reorganization, with a separate Department of Forests; advocates adoption of cubic volume measurement in place of Doyle rule; discusses timber sales policy, methods of disposing of limits, office records, collections, and the establishment of forest reserves.-C.L.

B-2 Forest Research in Eastern Canada. T. W. DWIGHT. **Can. For. Mag.** XVIII. No's 10 and 11, pp. 1098 and 1158). Describes research projects of the Dominion Forestry Branch, including those involving co-operation with provincial forest services and private interests. The fundamental importance of this class of work is stressed. C.L.

B-3 The Price of Human Safety. CLYDE LEAVITT. **Can. For. Mag.** XVIII, No. 11. (Nov. 1922, p. 1121). Discussess remedies for weaknesses in protective organization which led in part to the Haileybury fire disaster of October 4, 1922. Settlers' clearing fires the great menace; the permit system of regulating these; apathetic or unfavorable public sentiment toward adequate measures of fire prevention; the Haileybury fire not a forest fire; need for more adequate fire-ranging staff, and for an active public sentiment demanding full support for the provincial forest service.-C.L.

B-3 Why Forest Fire Plague Defies Cure. DR. C. D. HOWE. **Can. For. Mag.** XVIII, No. 11. (Nov. 1922, p. 1129). Forest fire protection is a question of public morals. This applies specifically to the Haileybury disaster of October 4, 1922. If the people are actually desirous of real protection, it is easily within their power to get it. In the past, they have been too largely indifferent.-C.L.

B-9 The Forest as a Recruiting Sergeant for New Canadians. ROBSON BLACK. **Can. For. Mag.** XVIII, No. 11. (Nov. 1922, p. 1130). Importance of our forests as a basis for employment of labor, and therefore of new population.-C.L.

B-9 "The Forests of Canada" Prepared by the Dominion Forestry Branch, Ottawa, in co-operation with the Dominion Bureau of Statistics, for the Empire Forestry Conference, held in Canada in July and August, 1923. Discusses the forests of Canada, as to extent, character, ownership, management, products and probable future. Ninety-three percent of the forest area of the Dominion is in public ownership upon which only the right to cut timber is sold, the soil remaining the property of the State, which prescribes the conditions under which cutting shall be carried on. The growing of forests is thus peculiarly a responsibility of the several Governments, Dominion and Provincial. The estimated stand of softwoods for all Canada is 198,-409 million cubic feet, and of hardwoods, 48,381 million cubic feet; grand total, 246,791 billion cubic feet. Details are shown in tabulations. The annual consumption for use averages 2,600 million cubic feet, the fire loss 800 million cubic feet, and during the past ten years destruction by the spruce bud-worm has averaged 1,-345 million cubic feet. With about 475,000,000 acres of potential, but at present unmerchantable, forest land, an average increment of 11.5 cubic feet per acre would balance the depletion from all causes, but in view of the destruction by fire there is little ground for hope that this increment is being produced. The great problems are to reduce the fire loss and to put and keep our forest lands in a productive condition.-C.L.

TO DEMONSTRATE SNOW MOTOR

Through the courtesy of Colonel W. E. Haskell and the International Paper Company, the Woodlands Section of the American Paper and Pulp Association has arranged for its unusual demonstration of snow pulpwood hauling to be held at Piercefield, N. Y., late in December or early in January.

The manufacturers of the snow motor claim that it will negotiate six feet of snow as well as six inches, without previous road making; that it can haul exceedingly heavy loads on steep grades, and that it will entirely revolutionize winter pulpwood operations.

The International Paper Company has a 4,500 cord job with stiff uphill haul at Piercefield, and another nearby at Tupper Lake. Accommodation can be secured both at Tupper Lake and at Piercefield.

Further details of the demonstration will be announced later and woods superintendents or engineers of paper companies are being invited to attend.

"Pulp Wood & Wood Pulp in North America," by R. S. Kellogg. Sent postpaid for $4.00. Pulp & Paper Magazine.

PULP AND PAPER NEWS

While Hydro power is reported to be going to waste in Fort William, one industry in that city was forced to close down part of its plant on Nov. 28 because of shortage of electrical energy. The Kam Power Company was unable to deliver a sufficient load for the first time in its history, and 150 men were laid off by the Fort William Paper Company. The firm resumed operation on the following day and it is expected that the shut-down for the present will only be one day a week. Meanwhile Sir Adam Beck is adamant on his proposition not to supply Hydro power to the Kam Power Company, unless the city council of Fort William officially applies, and agrees not to interfere with hydro service to Fort William. The city has taken the stand that the matter of power lies between the two developments and is not a matter of civic participation.

The Toronto Club of Printing House Craftsmen enjoyed a double header in the way of program at its regular monthly meeting in the Board of Trade rooms on the evening of Nov. 28, when, in addition to a report by President Alex. Munro on the recent Typothetae convention at Washington, Charles R. Conquergood, of the Canada Printing Ink Company, Toronto, told "The Story of Printing Ink." The story was illustrated with about sixty lantern slides, made and colored to show the diversity of the printer's product in which ink is used and the great array and variety of materials which are required by the modern ink maker to supply the needs of the Graphic Arts. The slides were shown at the rate of about one a minute and every minute proved a small mine of interesting information. Mr. Conquergood added the necessary verbal descriptions in an informative way and a fine dinner and stunt features added materially to the interest of the program.

George Bell, for several years manager of the Sterling Printing and Publishing Company, Toronto, and previously of the Port Colborne Reporter and Crystal Beach Recorder, is about to leave for Edmonton where he will become identified with the printing interests of Hon. Frank Oliver.

The Glengary Pulp and Paper Company, Limited, Cornwall, which was organized some time ago and has been operating at Cornwall, has been formed into a limited company with an authorized capital of $250,000.

To carry on business as pulp mill owners, timber merchants, etc., the Farlinger Company, Limited, has been organized with headquarters at Sioux Lookout, Kenora district, Ont., with an authorized capital of $2,500,000. The provisional directors are G. E. Farlinger, lumberman; M. C. Farlinger, Hugh Keefer, E. Keefer and L. Bengston.

The Greig-Brooks Lumber Company, Limited, has been granted an Ontario license with power to engage in pulpwood and timber operations. The headquarters are at Toronto and the authorized capital is $40,000. the provisional directors are D. B. Mullholland, C. W. Smyth and Alexander Greig.

E. Pullan, Limited, rag and paper stock, 6 Maud Street, Toronto, have sent out to the paper mills and others in the industry a neatly gotten up folder entitled "Nothing the Matter with Canada" in which some interesting figures are set forth showing this country's satisfactory position as a world trader. It is stated that Canada, per capita, is the largest foreign trading country is the world which "does not look as if we are headed straight for the pawnbrokers."

The many friends in the paper trade of Lieut-Col. Thomas Gibson, Vice-President of the Spanish River Pulp and Paper Mills, Limited, will regret to learn that he is still confined to his home in Toronto. His physicians have ordered a complete and prolonged rest from business activities.

Circulars have been sent out to the printing trade by the Canadian Paper Trade Association notifying the printers of a change in the terms on paper sales. The old terms were 2 per cent 30 days, net 60 days and under the new arrangement, beginning Jan. 1st next the terms will be net 30 days from the first of the month following shipment and a discount of 2 per cent will be allowed only if paid not later than the 20th of the following month.

George Hazen, the well-known stationer of Saskatoon, and formerly a traveller for Warwick Brothers & Rutter, Toronto, was renewing old friendships in Toronto last week.

A new line of writing tablets and envelopes under the brand name of the "Georgian Series" has just been put on the market by Warwick Brothers & Rutter, manufacturing stationers, Toronto. Each pad bears the customer's imprint and is accompanied by a large and attractive display card with each order. The goods are made in linen lawn, kid finish, superfine? wove, society wove and linen laid.

O. H. Moore, general manager of Hinde and Dauch, box board manufacturers, Toronto, and Mrs. Moore, have returned from a holiday trip to Mexico. While in Mexico Mr. Moore attended the big Shriners convention. Fred W. Halls, of the Fred W. Halls Paper Company, Limited, Toronto, has returned from a successful hunting expedition on the Algoma Central Railway sixty miles west of Sudbury. Among the trophies secured were a deer and a wildcat which quickly fell victims to Mr. Halls' trusty rifle.

It was announced in Toronto last week that J. F. McKenzie, who for some time has been assistant superintendent of the Don Valley Paper Mills in that city, had been appointed general superintendent in succession to C. Nelson Gain, who has been appointed general manager of the Canadian Vegetable Parchment Company and the Garden City Paper Mills, St. Catherines and Merriton. Mr. Gain is now engaged in moving to St. Catherines where he has taken a house and will enter upon his new duties in a few weeks' time. Sim Samuel, a well-known Toronto paper man, has joined the sales staff of the Lennox Paper Mills, Camden East, Ont., and is covering Toronto, Hamilton and Western Ontario. The firm are manufacturers of book and envelope papers. For some years Mr. Samuel was with the selling staff of the Lincoln Paper Mills and more recently was a member of the Samuel-McDermott Paper Company, Toronto.

Lost for twenty-one days in the vicinity of Michipicoten, Ont., where he was engaged in cutting pulpwood, Merril Faor, of Montreal, was finally rescued in a badly exhausted condition. During the twenty-one days he subsisted entirely on running vines, a few green leaves and one partridge. He had practically given up hope of ever getting out of the bush alive when rescue parties found him.

At a recent meeting at Dryden, Ont., of those interested in pulpwood, a resolution was adopted to the effect that those interested in the sale of pulpwood would regard the proposed embargo as detrimental to their interests by restricting the market for wood. At the same time they recognized that if the duty at present imposed by the United States on kraft paper could be reduced or entirely removed, the resulting benefit to Canadian mills would go far to improve the lot of the settlers by providing a home market for their pulpwood and other products. H. F. Bullard, general manager of the Dryden Paper Company, assured those present that so far as his company was concerned, there was no desire to interfere with their freedom to deal wherever their interests dictated. The problem of Canadian mills, he said, was not one of supply of raw material but one of wider markets for their products. Although they supplied a large portion of the western market, that, after all, was a very restricted market compared to the immense market to the south of us. As long as a raw material from Canada could reach American mills duty free and they were protected by a thirty per cent tariff, the inequality would be to the serious disadvantage of manufacturers on this side. With a more equal adjustment of tariffs be believed, the mills closer to the timber limits could hold their own. If they could supply the American market without the handicap of the tariff, his company probably would install two more paper machines. While the pulpwood embargo offered no particular advantage to his company he would be glad if the Government could successfully place a case before the Wahington Government to leave the tariff handicap more evenly adjusted.

A. J. Clempson said that the mill was not asking for any privileges in the buying of wood, especially as they were able to use jackpine by their special process, and it was mostly spruce that was exported. There was, however, a very heavy duty on the product of the mill when shipped across the line. If that could be modified he thought the settlers around Dryden would not need to worry much about finding outside markets, from the district to appear before the Royal Com- for their own mill would buy all the pulpwood they could cut. A. S. Swanson was appointed a delegate from to the district to appear before the Royal Commission when it sits at Port Arthur after the Christmas holidays.

R. H. Anderberg, manager of the Montreal branch of Paper Sales, Limited, was a visitor at the head office of the company in Toronto last week.

CLARK GOT MANICOUGAN LIMITS

Blocks of timber limits located on the North Shore, the continuation of the timberland of the Manicougan and English Bay Export Company, and involving an amount exceeding 1,000,000, were leased by auction, last week, at Quebec, by Frank W. Clark, acting for English interests which include Lord Rothermere, who already have large areas of land on the north shore in the vicinity of the new leased limits.

The auction was based on additional stumpage dues over the present tariff of $270, and two bids carried the price to $2.80, being ten cents over the upset price, resulting in the adjudication to Mr. Clark.

The other bidder was the Ontario Pulp & Paper Company, represented by Mr. Ashbaugh, who made the first bid of five cents. This latter company had apparently not understood, when depositing $250,000 some time ago, that the purchasor would have to construct a mill in one of the eleven large centres of the province, which would have entailed great expense, as the company already has a mill at Manicougan.

In addition to these blocks of land, small lots were sold in the Matapedia region, the bidding in the latter case reaching $3.30 over the upset price of $2.70. Their area, however, was very small, and they were adjudicated to Mr. Galland. In the Gaspe peninsula, three and a half square miles of land were sold at a price reaching twenty-five cents over the original $2.70. In this case the successful bidder will have to pay one thousand dollars per square mile as a bonus. Burnt timber in the Abitibi region was sold at five cents over the stumpage dues of $1.50, but the sale of several of the lots was witheld.

MANOUAN PULP AND PAPER

Notice has been sent out to stock and bondholders of Manouan Pulp and Paper, Limited, calling an annual meeting of shareholders to be held on December 10th. The bondholders are notified that the transfer register of the company's bonds will close on Friday afternoon, December 7th, at 5 p.m., and that no transfers of bonds will be recorded after that date and hour until December 11th. The following purposes are enumerated in the call of annual meeting: To receive reports, to consider and adopt a by-law to reduce number of directors, to elect directors, and such other business as may properly come before the meeting. It appears that there are two separate factions within the company, each desiring control. Each has a proposition to place before the security holders aimed at paying off the principal and interest of outstanding bonds, by sale of timber from the company's limits. Both factions have solicited support of security holders, but neither has made public the details of the plan to be advanced. This obviously is inviting bondholders who, says the "Gazette," have for some time been looking for interest on their holdings to take another leap in the dark. If either of these plans has the merits claimed for it by its proposers there should be no objection to stating them clearly and in detail to all bondholders so as to afford time for study before the date of meeting.

PREPARING FOR PAPER SHOW, 1924

The Paper Industries Exposition has reserved the entire first floor of the Grand Central Palace for its 1924 exhibition, and has made tentative reservation of the mezzanine floor in addition, if the number of exhibitors warrants this expansion of the paper show which will be held the Week beginning April 7th.

The success of the first exposition held in April 1923 was such that the change to the first floor space with its greater facilities for showing and viewing exhibits was justified. Already there have been contracts for space received from the 123 of those who exhibited in the 1923 exhibition, so the Exposition can now be considered as an annual event in the paper industry.

The attendance at the 1923 exposition was surprisingly large, there being 63,155 in attendance, and this in spite of the fact that it was the first paper show of national extent ever to be held in the United States. The endorsement of the exposition by the paper industry was largely responsible for this success; and the conduct of the show is such that the associations in the industry which endorsed the exposition in 1924 have already announced their endorsement of the Paper Industries Exposition as a recognized annual affair.

The attendance at the 1923 Exposition was surprizingly distributed between technical men, superintendents, plant executives, jobbers, printers and the general public interested in the story of paper. The Second show, with more exhibits and an even greater variety will undoubtedly attract even greater attention than the first "Paper Show" as it came to be generally known.

As was the case with the first show, the Exposition will be held during the week when the American Paper and Pulp and National Paper Trade Associations and their affiliated organizations are holding their annual meetings at the Waldorf Astoria.

These conventions bring together paper manufacturers and merchants from all parts of the country, and as was the case last year, some special sessions of paper organizations will be held at the Exposition. Both of these organizations have officially endorsed the Paper Industries Expositions, and are represented on the Advisory Committee selected to consult with the Exposition management. Other such organizations as the Salesmen's Association of the Paper Industry, the Technical Association, are included on the committee, as well as representatives of colleges whose work leads students to enter the paper industry. As was the case last spring, there will be special attention paid to the forestry problem as the basis of the raw material of the industry, and the exhibits already arranged for next spring include displays ranging all the way from chemicals to the machinery supply house, the mills themselves, and the jobbers who market the products of the paper machines.

A department to which special attention will be given is that of the converted products of paper, such as sanitary packages for food, special use papers, boxes and bags and the like.

In the arrangement of the week's program every effort will be made to hold special feature programs of the Exposition at times which will not conflict with the convention program of the paper manufacturers and merchants. Plans for a special technical program are already under way, and as last spring, the 1924 program will be replete with special features for each day of the exposition week.

BANQUE D'HOCHELAGA REPLIES TO BECKER

Mr. Beaudry Leman, General Manager of the Banque d'Hochelaga, in a communication to "Financial Service Limited," comments in a most emphatic way on the use of the name of his institution in the statement of Sir Frederick Becker, as cabled from London some days ago. Sir Frederick is connected with the Chicoutimi Pulp Co., Bay Sulphite Co., St. Lawrence Pulp and Lumber Co., Clyde and Sissiboo Pulp Co.

Mr. Leman states—

"We are at a loss to understand why the name of Bank of Hochelaga should have been brought forward in connection with the difficulties encountered by Messrs. Becker and Co. and associated companies. We must assume that conditions in England are somewhat similar to our own and that it is necessary in all cases where the judgment of individuals is found at fault to blame a bank or all the banks. It is one of the unsolicited functions of banks to act as scapegoats to be charged with all the sins of Israel.

"We have never been the bankers of Sir Frederick Becker or his companies and have felt for a long time that if the large and powerful London Banks were not inclined to grant additional credit for his industries operating in Great Britain, it would be elementary caution for a Canadian bank to watch its step.

"When the climax was reached we were not taken unawares, but we must state that one thing did surprise us. Sir Frederick Becker resigned as President and Director of Becker and Co., Limited only a few weeks before a Receiver was appointed and we had yet to hear of a British captain deserting his ship at the approach of a storm.

"If it affords a measure of consolation to Sir Frederick Becker to endeavour to shift from his shoulders the responsibility which properly rests there on to parties who are three thousand miles away from the scene of his activities, he is of course at liberty to do so. Such a course is not, however, in our estimation, in accordance with the best traditions of British fair play. We would be entirely unconcerned in the matter were it not for the very crude attempt now being made, and resort to which was suggested to us some months ago, to create the impression that we or some of our Canadian friends were manoeuvring to take advantage of his difficulties. The truth is to be found in another direction. We persistently refused to become enmeshed in its ventures, good or bad, and are not now nor have we ever been in the market for any of the securities he may control."

B. C. PULP & PAPER DEVELOPMENT

A despatch from Vancouver reports that a saw mill at Prince Rupert with large timber tracts nearby held by the Prince Rupert Holding Company, Limited, have been sold to a group of California and Iowa capitalists for approximately $500,000. The purchasers, it is thought, will develop a pulp and paper industry.

TECHNICAL SECTION

REVIEW OF RECENT LITERATURE

LIGNINS

A-1 The Colloid Chemistry of Wood. RUDOLF LORENZ. **Wochbl. Papierfabr.** 54, 1518-1521 (June 2, 1923). In contradistinction to cellulose which has been shown to be a substance of definite composition from whatever source it is derived, lignin is not a chemical individual but varies in composition with the different species of trees and plants. Solid substances deposited in plants are the result of dehydration; they originally occur in the sap in the colloidal state, as a hydrogel. The formation of the wood gums, as the pentosans, hexosans, pectins, and similar substances, is essentially one of adsorption. Wood formation proceeds in two stages: (1) the formation of a colloidal cellulose hydrogel in the youngest plant tissues, which later develops an enormous surface in the fibrous structure, and (2) the thickening of this surface by adsorption of substances from the cambial sap, resulting in layer formation. These substances are irreversibly adsorbed and may be termed "lignin." Since the leaves and other organs of plants and trees vary, it follows that the composition of the colloidal substances contained therein can not be the same, hence it is easy to understand why lignin does not have a uniform composition. Analyses of the colloid content of spring sap gave the values 4.5 to 8.5% for the period March to the end of April. In May and June the cambial sap had a coilloid content of 30 to 40%, which is the period of maximum wood formation. Lignin is deposited from this colloidal cambial sap.-J.L.P.

A-1; A-15 Constitution of Spruce Wood Lignin. P. KLASON. **Tids. for Kemi og Bergvaesen** 2, 53-56, 69-72 (1922). **Chem. Abs.** 17, 3168. Klason finally admits the possibility of a variation of his latest proposed lignin formula whereby a CH_2 group should not be situated in the flavone nucleus but between this and the coniferyl nucleus. He gives this variation some advantage, especially if one might suppose that lignin is formed spontaneously by polymerization of coniferyl aldehyde, which shoul also explain the optical inactivity of lignin.-C.J.W.

A-1; A-15 Lignin. J. GRUSS. **Ber. Botan. Ges.** 41, 48-52 (1923); **Chem. Abs.** 17, 3168. The lignin was prepared by extraction of wood pulp paper fiber with 4% sodium hydroxide and with water. A better yield was obtained from beechwood chips which, however, require a further extraction with alcohol and ether. The purified material, after hydrolysis with alcoholic hydrochloric acid, gave a substance which appears to be a lignin ester or alcohol, forming a yellow-white powder, soluble in alcohol, chloroform, and acetone. It dissolves in alkalies with a yellow-brown color, gives a brown-violet color with concentrated sulphuric acid and a red one with phloroglucinol and hydrochloric acid in alcohol. Crystals gradually form upon boiling and the alkaline solution and the precipitate obtained by acidifying the mother liquor with acetic acid no longer give the red phloroglucinol reaction. The lignin alcohol was split and the benzine nucleus went into the crystalline precipitate. This precipitate colors red-violet with iodine and concentrated sulphuric acid, changing into a viscous mass. The precipitate decolorizes slightly and becomes crystalline upon refluxing with 1.5% sulphuric acid but does not saccharify; it no longer dissolves in Alkali nor colors with iodine and acid. This property and the failure of the characteristic coloring with resorcinol and hydrochloric acid shows that in lignin alcohol the cellulose residue is with the benzine nucleus. The test given for the detection of ligninfication is solution of a milligram of the precipitated lignin alcohol in absolute alcohol and twice the quantity of pyrocatechol, acidification with hydrochloric acid, and stratification over concentrated sulphuric acid. The interphase is colored brown-violet shading into amethyst-violet. Coniferin gives a violet-orange, vanillin a rose-red. The colors are similar but quite distinguishable. Lignin was found by this test in newspaper and in coal.-C.J.W.

A-1; A-15 Analytical Investigation of the Chemical Composition of Ligninsulphonic Acid. P. KLASON. **Svensk Pappers Tid.** 25, 364-366, 385-388 (1922). A purely chemical study, fully abstracted in **Chem. Abs.** 17, 3168-3169.-C.J.W.

DYEING

K-8 Machine for and Process of Applying Coloring Liquid to Paper. L. P. WINCHENBAUGH and L. **GENTILE,** assignors to L. P. Winchenbaugh Co. U. S pats. 1,454,362 to 1,454,364, May 8, 1923. **No. 1,454,362**. The machine consists of two embossing rolls, and means for applying a coloring liquid to one of the rolls in sufficient quantity to penetrate the paper. The coloring liquid may be supplied by capillary attraction to the elevation of the embossing roll. **No. 1, 454,363.**

A solution of a dye in a volatile organic solvent of low viscosity is applied to finished paper in dry condition, in quantity sufficient to penetrate the substance of the paper, the penetration of the solution being regulated by the presence in the volatile solvent of a predetermined quantity of water. Transparent liquids of different colors may be successively applied to the paper so that they overlap. **No. 1,454,364.** A penetrative dye solution is applied to paper in quantity, regulated by capillary attraction, sufficient to penetrate the paper and spread from the point of application.-A.P.-C.

K-8 The Coloring of Paper. A. BELTZ. **Paper** 32, No. 17, 5-7 (Aug. 15, 1923); **Pulp and Paper** 21, 754 (July 26, 1923); **Paper Trade J.** 77, No. 6, 54 (Aug. 9, 1923).-A.P.-C.

K-8 Coloring Paper. ISMAR GINSBERG. .**Paper Ind.** 5, 918-921 (Sept. 1923). Brief outline of the general principles and review of the effects of sizing and fillers on coloring and of new developments (simultaneous coloring and loading, coloring by means of rolls, variegated effects).-A.P.-C.

UNITED STATES NOTES

The Paper Industries Exchange which has been conducted in Chicago since the middle of last summer and for a month past in New York City, was compelled to discontinue operations December 1 because of a lack of support in the trade. While the New York branch has been closed to any further activities involving the trade, the Chicago office will be maintained without trading and used for the collection of statistics for a new association of box board manufacturers which is being organized. The new trade association will be an outgrowth of the old exchange and will have no contact with the felt, wire and waste paper group except through committees that may be appointed by the respective organizations of these industries as the occasion may arise.

With the arrival of the season for cutting Christmas trees the New York State College of Forestry, Syracuse, N. Y., has issued a bulletin protesting against touching evergreens that have reached maturity. The bulletin explained that cutting the tops off mature evergreens mutilates nature's work of decades. It takes this species from thirty to fifty years to attain its full growth. It is declared that this method is uneconomical and in conflict with conservation principles.

A committee of the Investment Bankers' Association of America which has just completed a study of conditions affecting paper securities, reports that paper mill property is mortgagable in the sense of being tangible and representing large expenditure, and that the degree of desirability as security for a mortgage depends on its continued usefulness, its probable value at the end of a term of years and its ready salability. "The willingness to make large initial investments," says the report, "the necessity for favorable location and a constant danger from competition, both in the matter of new plants coming into the field and of occasional severe price cutting, cause a constant revision of values, and, in the end, a survival of the fittest. These things are perhaps not reassuring to investors in the matter of paper and pulp securities, but the factors exist, and must be considered at their true value before money is invested in the industry. On the other hand it must be remembered that there are plenty of men who are skilled enough in meeting the adverse factors to be extremely successful, and it is these successes that give the investor his information as to how and with whom his money will be most safely placed." Among paper mill bonds suggested by this concern as suitable for the business man who is able to keep in touch with developments are certain issues of the following paper companies: International Paper; Union Bag and Paper; Price Bros. & Co.; Belgo-Canadian Paper; and Spanish River Pulp and Paper Co.

The tenth semi-annual convention of the Cost Association of the Paper Industry was held a week ago in Philadelphia. Although the attendance was somewhat limited, the meeting developed into one of unusual importance due to the value of the many interesting papers read. Among the notable paper men who attended were: President C. A. Jasperson, President of the Cost Association; President Grellett Collins and Douglas W. Bond of the Dill and Collins Company, J. F. Hyde of the S. D. Warren Company, Henry W. Stokes, President of the American Paper and Pulp Association; Col. B. A. Franklin of the Strathmore Paper Company and Dr. Hugh P. Baker, Executive Secretary of the American Paper and Pulp Association. Three days were spent in Philadelphia by the visiting accountants. The several meetings and banquet took place in the new Hotel Sylvania. Most interesting charts were shown by Prof. Edward P. Moxey, Jr., of the Wharton School of Finance and Industry of the University of Pennsylvania, who spoke on "The Relation of the Cost Record to the Commercial Books." Other addresses were by Secretary-Treasurer Arthur Wall of the Robert Morris Associates, a national association of credit financial men, whose theme was, "The Value of a Typical Statement." A very interesting paper was read by James O. McKinsey, of Frazer and Torpet, Chicago, on "Why Paper and Pulp Mills Should Keep Budgets." W. G. McNaughton, Secretary-Treasurer of the Technical Association of the Pulp and Paper Industry, spoke on "Steam Power Costs"; C. H. Scovell, of Scovell, Wellington & Co., on the "Logical Structure of a Cost System," and S. F. Fannon on "The Seventy-Five Cent Dollar in Business." Members of the Association made up a party and visited the plant of Dill & Collins through the courtesy of President Collins. A banquet, which was marked by entertainment furnished by professional talent, closed the convention. James A. Reilly, of the American Writing Paper Co., was elected president for the ensuing term. T. J. Burke is secretary-treasurer.

The report of the United States Senate Committee on Reforestation is in preparation and will be made public within a few weeks. Extension of public forest ownership in areas where special national responsibility is involved and the removal of the hazards and handicaps attending private timber growing will be the outstanding recommendations. Recommendations regarding the extension of public forest ownership probably will include: endorsement of State and municipal forests; completion of purchases contemplated by the Weeks' law for the protection of navigable streams; enlargement of Federal purchase policy to include denuded areas in Eastern regions where the principal bodies of such land occur. These purchases to be made within the watersheds of navigable streams, but with a view to timber production as one of the primary objects and several other measures dealing with land grants and public land utilization. The committee is expected to recommend an appropriation of $1,000,000 annually to aid in fighting forest insects and diseases and to urge increases in appropriations for fighting forest fires.

The stationery business of Z. & W. W. Crane has been acquired by the Eaton, Crane and Pike Company, Dalton, Mass., and will be taken over by the latter beginning January 1.

The Markets

CANADIAN TRADE CONDITIONS

Toronto, Dec. 3, 1923

Business in pulp and paper circles in Ontario continues somewhat spotty and for the most part rather small in volume, although there has been some improvement in a few lines. There has been some picking up in trade generally but it is the testimony of most of the jobbers of paper that they are not getting the volume of business usually associated with the Christmas season. Retail business in all lines in Ontario has been backward owing to the mild fall and this has reacted against the printer's business and in turn against large turn-overs of paper. However, there has been enough business to keep paper jobbers and paper mill companies in a fairly good humor and it is quite likely that most paper firms will show a fairly satisfactory year's business by the end of the present month. Manufacturers of most lines of paper are moderately busy although in very few cases have tonnages been booked for any time ahead. Both jobbers and manufacturers appear to be operating on a basis that meets immediate requirements of the purchasers only and in practically no instance is anyone stocking beyond present needs.

Manufacturing stationers and envelope makers, while enjoying a fair Christmas trade, say they are not doing the business this season of the year usually brings forth, but there are still several weeks to go and most manufacturers are counting on overtaking the handicap of dull business during the past several months. The board mills are still running light and in one or two instances are closed down for repairs. Tissue, toilet and light-weight paper manufacturers generally are enjoying a fair amount of business, the specialty lines especially yielding good sales for the Christmas trade.

Wrapping paper mills and those making paper bags are only fairly busy, although the jobbers in these lines report slightly improved conditions. A number of the book paper mills are running at capacity with substantial tonnages booked ahead but bonds, writings and ledgers are reported to be rather draggy in respect to demand In no quarter is there anything else but optimism as to the future of the paper trade in the province.

PULP. — Both groundwood and the chemical pulps continue to show a weakening tendency and as far as can be learned no large transactions are taking place. Groundwood can be bought at $42.00 but the price ranges from that figure to $45.00. While most bleached sulphite is quoted at $80.00 at the mill it can be bought at a slightly less figure. Unbleached is selling at $60.00 with newsgrade at the same figure.

RAG AND PAPER STOCKS. — Rag and paper stocks have been in slightly better demand during the past week although the improvement in conditions has been only slightly marked. Prices for the lower grades have taken a drop and there has been a gradual narrowing of the area from which the paper and rag collectors can draw supplies. The following quotations prevail: No. 1 hard white shavings, $4.00; No. 1 soft white shavings, $3.50; heavy books and magazines, $1.65; ledgers and writings, $2.00; No. 1 kraft, $2.05; newspapers, 90c.; No. 1 mixed papers, 70c; No. 1 miscellaneous, 50c; No. 2 miscellaneous, 40c; No. 1 white cotton rags, 3½c; thirds and blues, repacked, $2.00; roofing rags, $1.00; No. 1 white shirt cuttings, 8½c; fancy shirt cuttings, 6c; canton flannels and bleaches, 8½c; white lawns, 8c; No. 1 scrap bagging, $18.00; No. 1 manilla rope, 6c; mixed strings, $18.00.

NEW YORK MARKETS

New York, December 1—(Special Correspondence) —Not much change of importance has been noted in the paper market in New York this week. Demand for some kinds of paper continues active — abnormally so — but there are other descriptions of paper which are not in so strong a market position. Buyers are still operating on a rather reserved scale in a majority of cases. With the end of the year and the inventory period but a month away, it is not surprising that consumers and jobbers should seek to keep their stocks low and that is just what most users and distributors of paper are doing. At the same time mills are managing to operate at a fair rate of capacity. Some branches of the manufacturing industry could easily accommodate additional business; in fact, some producers of paper are actively looking for more orders in an effort to keep their machines at as near full operation as possible, and yet the market is far from quiet and, viewing the situation in its entirety, there is better than a normal movement of paper into consuming channels.

That the industry is working on a moderately busy scale is shown by the monthly summary of paper production, shipments and stocks issued by the American Paper and Pulp Association for October, which shows that there was an appreciable increase in paper production and shipments during that month over September. A total of 433,507 net tons of all kinds of paper and board was produced by United States mills in October, compared with 378,706 net tons in the preceding month, 433,506 tons in August, 383,611 tons in July, and 423,356 tons in June. Shipments increased from 377,652 net tons of all grades in September to 421,059 tons in October, and in spite of the big gain in output — amounting to 43,801 net tons — mill stocks increased but slightly from a total of 195,894 net tons at the beginning of October to 197,342 tons at the end of that month.

Probably the figures in the report showing the percentage gains in production are even more significant. For example, there was 35 per cent. more bag paper produced in October than in September, and 24 per cent more felt and building papers. Output of newsprint increased 7 per cent, of book paper 12 per cent, of hanging paper 22 per cent, of fine paper 8 per cent, of wrapping paper 10 per cent, and of paper board 16 per cent. Statistics in the report bear out predictions made by the association that production would increase in October following the lull in the preceding month, which in turn followed a period of good activity during the mid-summer.

There has been no decline in newsprint consumption in the States. Instead, publishers are using print paper at a rate never before equalled. Moreover, the demand for advertising space in the daily newspapers is so great that publishers of nearly all the dailies in the large cities throughout the country are being compelled to omit columns of advertisements from almost every issue. Figures available for thus far this year show that all previous records of newsprint consumption have been exceeded, and, with another month of banner production and consumption to go, it is assured that 1923 will establish marks of print paper output and consumption which will give the industry something to aim at in the future.

There is a consistent demand for book paper but the volume is not quite as large as manufacturers desire. Most book paper mills are running fairly close to maximum but it is no secret that they have to force sales to some extent and in doing this they automatically weaken the price tone of the market. Quotations are well maintained but manufacturers and jobbers are granting concessions in cases, and buyers, having profited by experience of the past several months, are generally insistent on having their orders accepted a bit under recognized market levels.

Fine papers are exhibiting fair activity and prices are steady and tend higher. Reports say that mills in the Holyoke district are receiving more business than in quite a while and that they have found it necessary to increase their production. Tissue also is meeting a moderately good demand, and prices are firm. Coarse papers are none too active and the price situation is very unsatisfactory to manufacturers, who are up against foreign competition and who find it imperative at times to shade quoted prices to land orders. Nevertheless converters are absorbing fairly large amounts of kraft paper and business from such sources keeps these mills engaged.

Not much improvement, insofar as important demand has been concerned, is noted in paper board. Some consumers have increased their buying slightly but the board industry is still quiet, and there is keen competition among manufacturers to secure all the available business they can. The Paper Industries Exchange in New York and Chicago has been closed and all the effort expended by some board manufacturers to stabilize the market for board through the Exchange has gone for naught, for the present at least. Current quotations on plain chip board range around $45 per ton f.o.b. New York, while news board is quoted at $50 New York.

The report of the Box Board Research Service shows that 15 board mills in the East produced 1,807 tons of board during the week ended November 17, received new business totaling 2,479 tons, and had unfilled business on hand November 17 amounting to 4,062 tons, equal to six days' run. The production for the week was equal to 43 per cent of capacity of the mills reporting. Twenty-three board mills in the West produced 8,627 tons of board in the same week, equal to 80 per cent of their capacity; booked new business totalling 10,146 tons, and had unfilled business on hand November 17 amounting to 22,952 tons, equal to 13 days' output.

GROUND WOOD. — Ground wood is holding its own in price in a market displaying fair activity. Con-

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sumers are buying freely, and indications are that producers are shipping out pulp about as rapidly as it is made which means stocks are failing to accumulate. Domestic ground wood prices range around $40 a ton at pulp mills; doubtless some sales at slightly less are being made, but on the other hand, higher prices also have figured in transactions, quotations depending on the air dry test and the freight from grinding to consuming points. The consensus of opinion is that ground wood prices will harden as the winter proceeds, and there is little or no pressure to sell, grinders evidently being content to hold any supply they haven't an immediate outlet for.

CHEMICAL PULP. Reports continue to tell of an unsatisfactory market condition in chemical wood pulp. Paper and board manufacturers are buying pulp in a most reserved manner, and there is not enough demand to remove all the pulp which happens to be available in the market at present, owing to fairly heavy arrivals from abroad in the past few weeks and increased domestic production. At the same time there is a steadier tone in the market. Sellers do not seem so anxious to effect sales, probably figuring that bottom prices have been touched and that as the winter progresses pulp values will automatically stiffen as they usually do, and therefore being willing to hold unsold fibre for a time. There are some, however, who are cutting prices to attract bnuyers, and this is creative of much uncertainty and broad irregularity in prices. Domestic manufacturers of bleached sulphite continue to quote 4 cents a pound at pulp plants and up to 4.50 cents for the selected grade, yet there have been reports of drastic reductions in price in certain instances. No. 1 unbleached sulphite of foreign origin is said to have been sold at as low as 2.60 cents per pound ex dock New York, while Scandinavian kraft pulp is quoted at 2.75 cents and is being sold in some cases at much less. Foreign bleached sulphite of secondary quality has been sold at 3.50 cents ex dock New York; on the other hand, No. 1 imported bleached sulphite has brought well in excess of 4 cents on the dock.

RAGS. — Probably the feature in papermaking rags in New York this week was the stiffening of the price tone of roofing stock. Demand from felt paper mills did not broaden to any material degree and yet they showed sufficient increased interest to cause importers and dealers to hold out for better prices, supported by the firm belief that roofing rags are due to advance sharply soon after the turn of the year.

PAPER STOCK.—Prices of waste paper have tended higher and slight advances have been scored in some grades. No. 1 mixed paper has risen to where sales at 60 cents a hundred pounds f.o.b. New York have been made, while this grade of old paper has sold in the Middle West at $1 a hundred pounds at dealer's shipping points. Folded newspapers are up to 85 cents New York, heavy No. 1 book stock to 1.50 to 1.65 cents., crumpled book stock to 1.25 to 1.35 cents, and overissue newspapers to 1.05 cents. Shavings are steady, with local packers quoting 3.75 to 4 cents f.o.b. New York for No. 1 hard white, depending on the quality of the stock, and 3 to 3.25 cents for No. 1 soft white shavings. Old kraft paper is firm at 2.15 cents per pound New York, and there have been sales of white blank news cuttings at 2.20 c. f. o. b. this city.

Industrial Items

BEMIS ASSOCIATES, INC.

The Bemis Associates, Inc., Watertown, Mass., has taken over all the assets and liabilities of the Bemis Manufacturing Association with a capital of $145,000, the purpose being to manufacture all kinds of Gutta Percha products. The officers are: Arthur F. Townsend of New York, President; David L. Clark, of Pittsburgh, Vice-President; Robert M. Bowen, of Boston, Treasurer and General Manager.

Directors: — Arthur F. Townsend, Robert M. Bowen, William T. Jarvis, Allan F. Howard, Harvard L. Mann.

The Bemis Manufacturing Associates was a voluntary association organized in 1910 by the late Harry U. True, of Boston, and since his death in 1921 the business has been conducted by the same personnel as now controls the corporation.

Diamond B. Splicing Tissue, which is specially made for the paper trade by Bemis Associates Inc., is well-known and largely sold in Canadian mills.

"TREMOR" SCREENS FOR LLOYD'S MILL

Watford Engineering Works Limited, Watford, England, manufacturers of paper making machinery since 1827, and also of the well-known Watford patent "Tremor" strainer which is made and sold in Canada by Charles Walmsley & Company, (Canada) Limited at their Longueuil, Quebec, Works, have obtained the order for "Tremor" Screens for the new Kemsley Mill being built by Messrs. Lloyd Limited of Sittingbourne.

These screens will be fitted with the "Lloyd & Martin's" patent mantles, that have circular holes instead of sawn splits which is particularly applicable for "News", and have been used for some time at Sittingbourne as well as on the Continent.

The screens will be the large No. 3 outward flow "Tremors."

Messrs. W. J. Michaud Co., Ltd., 306-7 St. Nicholas Building, Montreal, are now operating most of the agencies formerly handled by Winn & Holland, Limited, with whom Mr. Wm. J. Michaud was associated for many years as vice-president and manager. These include Borax Consolidated, Ltd., Borax and Boric Acid, Brunner Mond & Co. Ltd., Calcium Chloride, Silicate of Soda, etc., Mond Nickel Co., Ltd., Sulphate of Copper, Peter Spence & Sons, Ltd., Alum, Titanium Potassium Oxalate, Chrome, Alum Castner Keller Alkali Co., Ltd., Bleaching Powder, "White's" Bichromate of Potash and Bichromate of Soda, Chometan. Also Blanc Fixe, Logwood Extract, Oxalic Acid, etc., etc.

Judging from the 1923 activities of James W. Sewell, the forest engineer of Old Town, Maine, there is much stirring in woodland operations in the Pine Tree State this year. Mr. Sewell reports that the usual seasonal quiet in his business of cruising, valuing and mapping has failed this year to materialize. The largest area the Sewell organization has yet encountered, both in the number of different jobs and in sizes of area covered, kept it going at a lively rate, and no lull is in sight. It appears from this that owners and operators are coming more and more to want exact information on their timber and resources than formerly.

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OF CANADA

A Weekly Magazine Devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades

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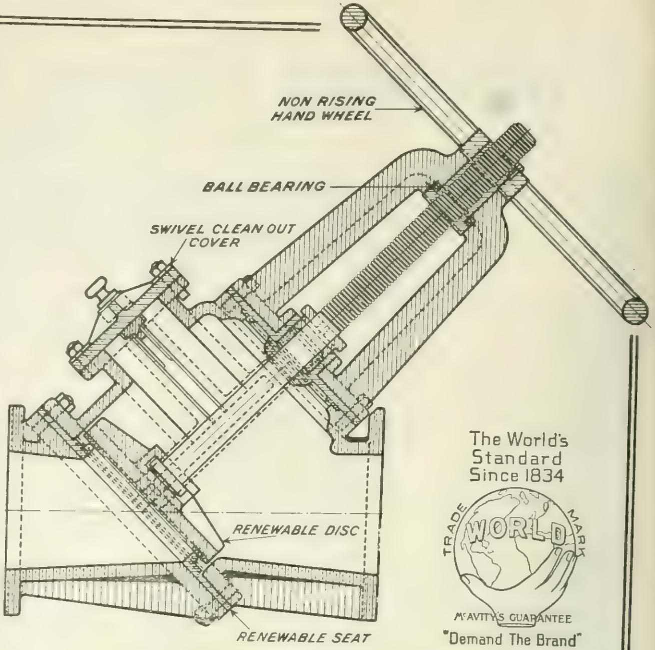

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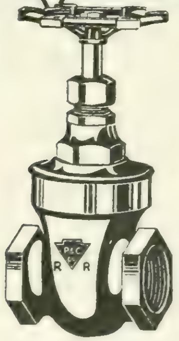

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:-: EDITORIAL :-:

THE VALUE OF WORK

By the use of the word *work* in these few lines we wish to connote the idea of *labor* — not a mere whiling away of one's time. There are some men who are said to "go to *work*" when they merely, with a pipe in their mouths, indulge in a little make-believe.

We noticed a man, the other day in Montreal, performing what seemed to us an astounding feat. He was standing on a ladder, and, apparently asleep, he was holding a paint-pot in one hand and a brush in the other. A passer-by informed us that he was working, from which we inferred that his work consisted in not falling off the ladder or not dropping his paint-pot or brush, for negative exertion of this kind was all that he was indulging in — "paid by the hour," as our friend, the passer-by, half enviously remarked. He himself, he said, was paid by the job, and, he added, as though it were a grievance, that he "*had* to work." In reality, instead of feeling aggrieved, he should have been thankful.

It is hard to understand why work should have been regarded as man's primal curse. It is really one of his most substantial blessings. There are few men, indeed, who have the strength of character to be beyond the necessity of work. And such men are generally the hardest workers of all. For the man who has sufficient moral stability for his character to be unimpaired by amplest leisure, is, nearly always curiously enough, as it seems at first sight — though, in reality, there is nothing strange about it — one who cannot bear to be idle. But he works without the propulsion of necessity. And it is, as likely as not, from this very circumstance, that his work derives not a little of its charm. He can choose his own branch of work. And, above all, he can choose public work or social work — work for others, and work the primary object of which is not to feed and clothe himself.

Take the case of Mr. Gladstone, for example. Born in a station of life, which rendered any professional or commercial labor on his part superfluous, with everything delightful surrounding him, he yet chose, for his portion in life, work — for others, it is true, but still work of the sternest sort. For he could do in four hours what it took another man a day to do, and he often worked fourteen hours a day! And yet he was exactly the style of man to whom dallying in a library, poring over classical tomes, and all the favorite aspects of that dignified ease, which most men of culture call work, the work of polished idleness, appealed with peculiar force. Indeed, they were his pastimes. For it is a mark of noble souls that, with them, work like life itself, must be treated as a thing that is real and earnest.

Still life is not all work, and work is not all life. For our life should be our vocation, and our work should be our avocation, in the strict sense of that much ill-used word — our by-product, so to speak.

"Let me but do my work from day to day
In field or forest, at the desk or loom,
In roaring market place or tranquil room;
Let me but find it in my heart to say
When vagrant wishes beckon me astray;
This is my work; my blessing, not my doom;
Of all who live, I am the one by whom
This work can best be done, in the right way.
Then shall I see it not too great, nor small,
To suit my spirit and to prove my powers,
Then shall I cheerful greet the laboring hours,
And cheerful turn, when the long shadows fall,
At eventide, to play, and love, and rest,
Because I know for me my work is best."

USING CANADIAN PAPER

In connection with the recent election campaign the London Times was accused of buying newsprint in Germany. One of the owners of this paper stated that the Times gets 75 per cent. of its paper from Canada and Newfoundland and the remainder from Scandinavia, but does not get any from Germany although German paper is offered at very low prices.

This doubtless means that practically all of the paper used in the great London daily is obtained from the mills of the Anglo-Newfoundland Development Company at Grand Falls, Newfoundland, for comparatively little of the paper actually made in the Dominion is finding its way to England at the present time. It is encouraging, however, to note the kindly disposition of British publishers toward Canadian paper and to feel that the high quality of newsprint made here is appreciated in England. From the best sources of information, however, it certainly appears that the Paper Making Industry in England is suffering very seriously from importation of exceedingly cheap paper from the Continent, and it would certainly be to the benefit of their fellow Englishmen if some other large users of paper in Great Britain would follow the lead of the Times and use a larger proportion of paper made under the British flag. There are many Englishmen connected with pulp and paper making enterprises in Canada and in years to come there will be an increasing number. It is to the interest of the Empire to keep these people busy and a diversion of some business which is now placed on the Continent would go a long way toward furnishing occupation for Britons who are making pulp and paper on this side of the Atlantic.

EXPORTING MILLIONS OF TREES

Officials of the Department of Lands and Mines of New Brunswick estimate that 750,000 Christmas trees have been exported from that province to the United States this season. The other provinces are shipping out Christmas trees in like proportion. The age of these trees will range from 5 to 20 years and the price represents something like 10 cents apiece to the farmer who cuts them, and from 50 cents to $2 or more to the person who buys the trees for a few hours of decoration at Christmas time. This trade is a big thing for the dealers but mighty poor business for the farmer with a wood-lot who would get far more for the matured trees, from which, forsooth, he could still sell the tops for Christmas trees and it would be far better for the nation to have the matured wood for conversion into commercial commodities requiring the employment of thousands of Canadian citizens. If the Christmas tree trade is to persist it should be carried on under proper regulation so that instead of being a slaughter of future timber it might be a scientific thinning out of the proportion of these that would be submerged later in the development of the forests. Such treatment of the wood-lot would greatly facilitate the growth of the trees that are left and would make possible a selection that would leave the finest trees to develop to maturity. The tops of these trees would be even more valuable as Christmas trees and, in fact, it might be worth the serious consideration of our Provincial Forestry Departments to require that a certain proportion of Christmas trees cut for decorative purposes should be the recovered tops of trees cut for logs or pulpwood. We feel that failure to introduce suitable cutting regulations is likely to result in practical prohibition of the use of Christmas trees. Besides being a very worthwhile economic measure such a regulation would be a very effective fire preventive measure and life protector.

There is no such thing as utter failure to one who has done his best.

COBWEBS

We notice that the University of Toronto is again arranging for a course in Export Trade which will be carried on in co-operation with the Canadian Manufacturers' Association and the Department of Trade and Commerce. This is to occupy two weeks commencing January 21st. The three principal factors in this educational work are to be commended for their work and to be congratulated for their success in the first series of lectures and studies on this subject which was held last year. It remains, however, for the manufacturers to build the foundation for any possible export business by laying four cornerstones, namely, an efficient staff, educated to the business and in contact with the world's requirements, unquestionable business integrity, efficient organization and manufacturing methods which make possible the production of quality goods at minimum cost, honest advertising. At a time when labor and material conditions in foreign countries are such as to put every manufacturer on his mettle it remains for the Canadian manufacturers to be obliged to rely on efficient factory organization and perfect loyalty and co-operation from every employee in a whole-hearted, honest effort to produce goods with a high reputation and at the lowest price consistent with the scale of wages and living conditions which everyone hopes to maintain in the Dominion. A knowledge of export markets and all things connected therewith is most helpful and must be followed, if export trade is to be carried on at an advantage and we must have an export trade in order to maintain our financial standing as a nation. It remains, however, for those inside the factory to make the foundation on which the export trade is to be based.

From the character of the Indian Summer that we have been blessed with this year some of us are beginning to wonder as to whether or not the real article and the Indian variety got mixed. Anyway, we haven't heard anybody complaining about the coal they haven't burned.

Doubtless many people have begun to figure out a lot of interesting possibilities on the basis of a rumor that there may be a combination of Price Bros. & Company and Chicoutimi Pulp Company. We have heard of less logical suggestions and shall await with interest something authentic from the parties involved.

The over-subscription by 40 per cent of the £10,000,000 of the recent Irish Free State Loan is a very eloquent commentary on the present state of affairs in the Emerald Isle as compared with conditions there a couple of years ago.

"Commonsense and Cost Systems"

By THOMAS J. BURKE, C.A.

Secretary-Treasurer, Cost Association of the Paper Industry.

At the risk of being accused of reiteration, I want to urge again upon executives the importance of spending some of the time which they set aside for [illegible] work, in an examination of the possibility of bringing about improvements in the manufacturing efficiency and general work of their mills through developing their Cost Departments.

I have selected this short title "Commonsense and Cost Systems" because I desire very strongly to emphasize the fact that the Cost Association has consistently followed a policy of simplicity in everything it has undertaken, as regards costs. We have endeavored to find the simplest and best way of doing things. The only method to find the simplest and best way, is to examine all the different methods in use, but we cannot do this unless it is made possible for us to do so. In other words, we are asking very sincerely that executives permit and cost accountants will agree, to supply us with information regarding what they are doing in cost work, and what they would like to do. You have doubtless heard it said on numerous occasions, that executives themselves are not interested in costs. What they want are results, which will show in their dollars and cents column. They fight shy of even discussing their Cost Departments, because so much has been written regarding cost systems which has made it appear that a cost system is a conglomeration of forms and reports which causes a lot of work and worry, without giving adequate results.

But after all, what is a Cost System? Nothing more than applied commonsense. Take your mill, you have bought or built that mill at a big outlay; you have to pay taxes and insurance and repairs on it, and in addition every year there is a certain amount of depreciation to meet, which sum should be set aside periodically, so that as the mill falls into decay, there will be an adequate sum on hand to replace it. Now then, you have bought that mill in order to have a place to manufacture your pulp or paper. The sensible thing to do, is to make a charge against that pulp or paper for the use of that mill, and this charge must of course be based on the cost of the mill to you, both the cost of producing and the general expense to be kept as outlined above. Is not the most sensible way of doing this, to allocate these costs on the basis of the space provided in the mill? Certain operations have to be carried on in your mill, and each of these operations requires space in the mill. Why not, then, charge into the cost of these operations, your cost in providing the space for them to be carried on.

Another point to be considered, however, is that you may not be using that space all the time. The mill may be shut down. Is it not then a sensible thing to take this into consideration and to make up your mind what is the normal running time of your mill, and base your charges for the use of the space provided on this normal running time, so that when the mill is shut down, owing to lack of orders, you may quite fairly determine what is the cost to you of shutting the mill down during that time. Why attempt to charge that cost into your products. It has often been pointed out in this connection, that if a shirt factory made 10,000 shirts a year and the overhead was $10,000, the overhead cost to be added would be $1.00 a shirt, but that if that factory only made two shirts during the year, the overhead cost per shirt would be $5,000, which, of course, would be absurd. But following this logical conclusion, that is practically what many pulp and paper mill executives are doing today. They are not taking into consideration in estimating their costs, the fact that sometimes their mills are shut down or are running below their normal capacity, because of lack of orders. This is a most important point and should be seriously considered, and an attempt made no matter how poor, to meet this situation.

Most of the remarks made above regarding the mill, apply also to the machinery and equipment purchased for the mill. They too depreciate and have to be repaired. But in allocating the cost against the products made on these machines, we cannot do so on the basis of the space taken up by the machines, that would not be a sensible procedure. What we have to do, is to determine the normal producing capacity of these machines, also their normal running time. Against this normal running time we have to list the cost to us of putting that machine where it is and making it do its work. Now, what is the most sensible way of allocating the cost? Is it not the time basis way? If we then determine what it costs to run the machine for an hour by totalling our costs and dividing them by the normal running time of the machine, we have a very simple way of finding out what our costs are on each operation, by adding the productive labor used in connection with that machine, the raw material cost, both of which are of course always easily obtained, and the cost of the space taken up by the machine.

Again we have to take into consideration the point of shut down for causes beyond the control of the production department, such as lack of orders. Since, however, the hourly cost of running the machine has been determined, it becomes a comparatively simple matter to ascertain the cost of these shut downs. These things, of course, are common knowledge. They are only mentioned here because of the apparent necessity of insisting upon the fact that although it is necessary to compile a great number of figures in arranging a good cost system, for which cost accountants are often criticized, yet it should be remembered that these figures merely represent the carrying out of quite common-place, commonsense ideas.

We all know that in this country, and probably the world generally, the quality of patience for which our forefathers were noted, has become rare. Most of us are impatient to get a thing done quickly. We want results at once, and any short cuts we can take are taken, sometimes without a sufficiently careful examination as to whether these short cuts will lead us where we want to go. In other words, while we want things done in a commonsense practical way, we are not always willing to undertake the necessary drudgery in connection with this way.

The layout of a good Cost System even in a commonsense practical way is very hard work, it requires not only skill but diplomacy, and a very conscientious worker. It took the Federal Tax Acts to awaken the public to the fact that there was a great deal more in accountancy than they had ever imagined. For too many years bookkeepers have been laughed at for doing things considered, unnecessary, the expression generally used, being, "too theoretical."

The Federal Tax Acts have, however, somewhat changed that. The public realizes a good deal better than it did, the necessity for the use of proper accounting methods in its business.

The Government has called for information which can only be given satisfactorily by means of a properly kept set of books, and I have repeatedly heard it said, that at least to this extent the Federal Tax Acts have benefited American business.

Now as to costs, cannot the pulp and paper industry take a lesson from the many mills that have gone into bankruptcy in the past. No doubt many causes have contributed to the downfall of these mills, but nobody can deny the fact that many of them failed for amounts which indicated very very clearly, the fact that the mills had been operating for some time past, prior to their final break, on a basis which made it impossible for them to even "break even". In other words, it has often been made clear in the investigations made by the referees, that the men operating these mills were not in possession of the necessary facts regarding the operating costs of the mills, or they never could have possibly permitted production to continue on the basis on which it had continued. The commonsense thing would be, it appears, to take a lesson from these numerous bankruptcies, especially at a time when we are told and personally I am inclined to believe it, that competition must become more severe, and definitely decide the facts about costs. Decide, that we want to know how our mill cost is being taken care of; how our machinery and equipment cost is being taken care of; what is being done about executives' salaries, are they being considered in the cost; has any attempt been made to allocate selling expenses? Questions like these and many others are the ones which it seems to me executives should insist on having answered to their satisfaction. But that is only one phase of the facts to be derived from a commonsense cost system, namely, that we get facts as to our operating costs, because once we are assured that these facts are correct, we are in a position to make further investigations, in an effort to determine whether we can cut down these costs in any particular.

We may find that some machine on which we have been priding ourselves as being one which has rendered extremely good service for a long period of years, is in fact being operated at a very high cost, and that it would very well pay us to replace it with a more modern machine.

No article on "Commonsense Costs for Paper Mills" is complete, however, without some reference to "steam". This is indeed a subject which requires a book to itself. The Cost Association some months ago sent out questionnaires on "Steam Costs." They were very carefully made up by a competent engineer. The number returned to date has been most disappointing, evidently due to the fact, that the filling in of these questionnaires would involve a lot of work on the Cost Department. In this connection I want to make a very strong appeal to cost men throughout the industry, to give a little of their time weekly to the development of cost work generally. Here is the Cost Association, financed by the Pulp and Paper Manufacturers, operating not only for the benefit of those manufacturers and others who do not contribute, but also operating in the interests of the cost men themselves.

As Secretary-Treasurer of this Association, I am only too anxious to be of service to cost men in the industry. I am glad at any time to receive inquiries or suggestions from them, whether the mills to which they are attached are members of the Association or not. It is our belief that as the Association proves its worth, the mill will later on become a member, and in many cases in the past this belief has been justified. Therefore, I very strongly appeal to cost men to remember Theodore Roosevelt's statement, to the effect that, "every man owes a certain amount of his time to the up-building of the profession or industry to which he belongs."

The filling in of the "Steam Cost" questionnaire may be impossible for some mills. It may involve very hard work on others, but just this fact proves the necessity for filling in the questionnaire. The very fact that the information necessary is not available, proves that the mills making these statements do not themselves know really what their steam is costing them, nor how the steam is being used. They may have very up-to-date mills, but if they are not in a position to state definitely the cost of running their steam plant, and the use to which the steam made in that plant is put, then I say, they are very urgently in need of obtaining the information which the "Steam Cost" questionnaire we sent out would develop.

TECHNICAL PAPER MEN AT WIRE WORKS

The outstanding event in September, says the "Paper Maker and British Paper Trade Journal," was the 8th Conference of the Technical Section of the Paper Makers' Association of Great Britain and Ireland, held at Edinburgh, again meeting in the halls of Herrot-Watt College, a name and place familiar to many Canadians. The Paper Maker goes on to say, after mentioning the excellent papers read at the meeting.

On the Thursday morning the party had an opportunity of seeing some of the intricacies and the delicate operation in connection with the making of machine wires. Under the direction of Mr. Arthur McFarlane and his lieutenants the visitors saw every operation carried on in the extensive departments of the United Wire Works, Ltd., Leith Walk.

The parties were shown the metal in the various stages through which it passes, and several paper-makers who for the first time saw the wire drawing, annealing, testing, winding and re-winding, purification processes, the working on the looms, and the extremely difficult and delicate operation of seaming by hand, came away convinced that when a wire cannot be obtained as quickly as desired there are very good reasons indeed why the manufacturer cannot possibly speed up the various processes involved.

Coal

By A. B. OILER

In our article entitled "Heat" which was published in the Pulp and Paper Magazine of Oct. 11th 1923 we found much of interest while following the B.t.u. from the boiler room through the mill and back again. While the mill is running, the same events are happening all the time in practically the same order. In a diagram they can be shown best by a circle, so such a regular succession of events is defined as a "cycle."

While the boilers are working there is another very interesting cycle being completed in the furnaces. After millions of years the Carbon in the coal is going back to the air whence it came via the plants and trees of prehistoric days. This cycle is most interesting and important to any person whose business it is to know coal. In the ordinary text book very little is said on the subject, probably because it would take too much space. But one who expects to reduce steam costs can read up on Geology to good advantage and be well entertained at the same time. We offer a brief study of the formation of coal because there is no better way to explain the difference in coals, due to ash, volatile matter, etc.

Geologists tell us that the earth was at first a ball of flaming gas and all our carbon was in the gaseous state. If so, it must have been very hot in those days, for carbon will not vaporize till raised to a temperature of 6330 deg. F. Those men say that after several millions of years, when things were cooled down a bit, carbon had formed a combination with oxygen and was still in the air as carbon dioxide CO_2. Eventually some substances became liquids and some solids and the Earth had a crust of solid matter which projected in places through the waters which covered it.

None of the land was very high, for all the mountains we have now were formed in later ages. Nor was it solid through and through. From time to time some part would sink again into the sea. The district that is now the Maritime Provinces was one of these uncertain spots, and the coal now mined there is due to that fact.

It is thought that for thousands of years, this area would be entirely covered by the waters of a huge river which flowed from the north-west. Thousands of tons of clay and sand were carried in by this river, till the water was so shallow that plants began to grow. We have the same thing happening in the mouths of many of our rivers to-day, but not on such a grand scale because our streams are smaller.

The ancient river continued to carry down solid material till after a while a ring of land was formed around the district and it was afterwards covered by water only at the time of floods. During the rest of each year, the ring of land and the vegetation which covered it, caught most of the solid matter in the water, so the interior of the island was built up with vegetable matter. Every plant and tree dropped leaves and branches, and many plants and some trees were overturned into the bog so the whole district was covered with a mat of partly decomposed vegetable matter. It was only partly decomposed because when under water it would not get oxygen enough to make it rot entirely. The water of our present day peat bogs acts as a preservative of solid matter in just the same way.

There we have the point. The principal solid matter of all plants is cellulose, which is largely carbon. The only available supply of it is in the air in the form of carbon dioxide. Plants take this gas through their leaves, which are spread to the sun so the heat will decompose it to carbon and oxygen. Most of this oxygen is returned to the air and the carbon forms a new combination — $C_6H_{10}O_{35}$ — which is "cellulose", the fibre of the plant.

The vegetation of the coal age grew faster than ours does because there was more CO_2 in the air. Also because it was warmer then and there was an excess of water everywhere. More than half of the material in any tree is water and plants have a still higher percentage. Heat is required for rapid growth, so the conditions were right in every respect. The trees were immense both in diameter and height and the undergrowth more dense than any of our tropical forests, so probably the bog increased in depth twenty times faster then than ours do. But even at what it would take something like a million years to lay down the coal in the Maritime Provinces.

In explaining the fact that all coal seams are overlaid with stoney matter, some Geologists say that the crust of the earth was comparatively soft in that age and a great weight on any portion would cause that district to sink. If such were the case, the weight of the materials in the ancient peat bogs caused them to sink. Other explanations are offered for the formation of the strata containing coal, all of which are very interesting, and each may have had a part in the work. To us it does not matter whether the coal basin sank of its own weight or because the earth's crust was continually changing shape due to one part cooling faster than another and so forth. The fact remains that the river did eventually flow over the bog again, covering the vegetation with clay and other mineral matter which afterwards turned to rock. This material was piled on till the water became shallow again. Then plants grew once more and another bog formed. In the Nova Scotia coal field the process went on till there were about 100 seams of coal laid down in a bed of rock 13,000 ft. thick.

In this, the first process of coal making, the ash was laid down as well as the coal making material. The fact that the peat bog was occasionally flooded accounts for a part of the ash making material. There would be poor coal, high in ash in any part of the coal district where the ring of vegetation around the outside was not thick enough to prevent the river water from carrying in its load of earthy matter. Though your coal dealer may offer coal from a certain well known seam, if that coal is mined near the edges of the seam it will contain more ash per pound than the average of the coal in the seam.

There will be a great deal of ash in coal from the top and bottom of the seam, but particularly at the top because the clay would mix with the leaves of the trees, which would grow for a long time after the plants of the undergrowth were covered and dead.

This shaly coal in some state can be mixed in with the good coal if the mine company is not very careful about its methods of mining and cleaning its product. And that is one real reason for analysing coal and keeping it up to specifications.

The quantity of ash in a particular coal depends on the conditions under which the coal measures were laid down; the quality, on the kind of mineral matter the river gathered up from the land over which it flowed before it reached the coal basin. There was very little ash in the vegetable matter, probably not more than 2 per cent. But while the plants were lying in the swamp, they lost a portion of their weight in CO_2 and CH_4. Even after the seam was covered there were plenty of cracks or fissures through which these gases could escape. The bulk of the water was squeezed out under the pressure of the materials piled upon the seam so that by weight only about 20 per cent. of the original material is left in the coal. Of course, all the ash making substances are left in the coal because they are solid matter. So 5 or 6 per cent. of our ash is due to material left in the coal by the plants themselves. If there is only 6 per cent. ash in a coal it may be considered as good average fuel, as far as quantity of ash is concerned.

Quality of ash is another matter altogether. The percentage of ash in a certain coal may be low and it will still give a good deal of trouble. The troublesome feature is, of course, clinker. If an ash softens below 2,200 deg. F. there is likely to be trouble from clinkering. Most steam coals form a certain amount of clinker when the furnace temperature is from 2,200 deg. F. to 2,600 deg. F., but the kind that does not give trouble unless stirred up. The fusion point of hard coal ash is above 2,600 deg. F. so there is no clinker formed when burning this grade.

The cost of ash is always worth figuring when you are buying coal. For instance, suppose you require 5,000 tons of coal to carry you through the Winter. If you get 6 per cent. ash you pay for 300 tons of it and, say your coal costs $7.00 per ton, you hand out $2,100. Double up the quantity of ash and unless you have bought on an "ash free" basis, away goes another $2,100, at least. Besides you have to pay for more men and equipment to get this extra material out of the boiler room.

Other things being equal, a coal high in ash will "evolve" less heat than one of low ash. Where the percentage of ash is high, the B.t.u. is usually low. For example:

Moisture	Volatile matter	Fixed carbon	Ash	B.t.u. per lb. by coal
3.02	33.81	59.45	6.74	14,414
4.31	33.88	53.67	12.45	13,144

In this particular case the loss in B.t.u. is very large and the efficiency of the coal correspondingly less.

Besides, you have to figure on increased draft because there will be more material on your grates and unless the draft is strong you will not get enough air through the ash to burn the coal completely. If this draft is furnished by a stack, it means [illegible] through the furnace walls. Where forced draft is used you have to pay for the power required to operate the blowers. More combustible will be lost with the ash because the fires will have to be cleaned more often and more good coal will go to the pit in proportion.

We would discuss ash, to greater length and take up other coal impurities, but our space is limited, and now that attention has been drawn to the fact that one can save money by studying them, we will pass on with just a word about moisture. There is a good reason for wetting very fine industry coal. Otherwise it would be difficult to get enough air through it to burn it. But every drop of water which goes into the furnace has to be heated till it turns to steam at stack temperature. Not one B.t.u. used to make steam in the furnace will perform useful work in the mill, so any heat thus used must be discounted on the coal bill.

The difference in coals due to the variation in the quantities of fixed and volatile matter is easier to understand, if we go back again to the coal age. We want to know why some coal should be very nearly solid carbon and others produce a great deal of gas. While the vegetable matter lay on the top of the peat bog exposed to the air, part of the carbon in it was joined to part of its oxygen to make CO_2 and part of its hydrogen united with oxygen of the air to form water. Both are lost into the air and the material weighs less and less. This is the process of decay as we know it in our every day life, and if we examine an extremely rotten bit of wood from which the water is all gone, it will fall to dust which is very nearly pure carbon.

Now consider the vegetable matter which was buried in the ground where none of the oxygen of the air could get at it. It was still possible for some of the carbon of the plant to unite with some of the oxygen in it and form CO_2 and for some to hook up with hydrogen to form methane or marsh gas CH_4, also for part of the hydrogen to unite with oxygen to form water. Both CO_2 and CH_4 are gases which would escape through the overlying rock if given a chance. Water would be squeezed through any cracks and fissures in the overlying rock, if there were such.

From some coal basins most of the gases got away, for during the contraction of the crust of the earth, the rocks were very much disturbed, folded, and subjected to heat, so that the gases were both given an opportunity to escape and this was hastened by a rise in temperature. It is from these districts we get our hard coal. Soft coal comes from horizontal strata which have not been much disturbed, consequently they still contain most of the gaseous matter. But it only requires to be raised to a slightly higher temperature, say 500° F. and the gases will come off rapidly, so fast in fact that it is difficult to burn them before they escape from the furnace.

The difficulty is increased because it is necessary to raise these gases to a very much higher temperature before they will burn. Some products require to be heated to 1,200 deg. F. before they ignite. The furnace for soft coal is or should be designed with great care if it is to be efficient. It will be a large furnace, for the more volatile matter your coal contains, the greater furnace volume required so that the air and gases will have time to become well mixed and burn properly. When one realizes that it will only take a few seconds for the gases to pass to the stack, no matter how large the furnace is, then the difficulty of burning highly volatile coal will be properly appreciated.

The formation of coal is a process which goes on through a series of steps from the peat swamp to

(Continued on page 1219)

A Visit to Messrs. LLoyd's New Mill

By THE EDITOR of the Paper Maker and British Paper Trade Journal,
(From which account it is reprinted)

The building operations in connection with the new mill now being erected at Kemsley, Kent, are making substantial progress, and already the chimney and main buildings are a landmark for miles round. The contractors for the steel work have gone well ahead of the bricklayers, and the local contractor would gladly engage another 100 men for the bricklaying if they could be obtained. But considering the practical work on the site commenced with the new year, 1923, gratifying progress has been made and one is impressed by the majestic proportions of the main buildings, particularly the machine house, which is twice the size of any machine room at Sittingbourne. The mill stands on historic ground, and local tradition says here once stood a castle of importance erected to withstand the adventurous Danes, who undoubtedly did get as far as Milton Regis, and quite a number of the invaders' bones have been found near the banks of the Swale and the Creek, which runs alongside the new mill and enables 100-ton barges to come alongside. Since my previous visit the water supply, ample in quantity and pure in quality, has been proved, and the water storage reservoirs are approaching completion.

The Kemsley Mills will mean a new colony, built on model lines, and what Mr. Frank Lloyd's enterprise has meant for Sittingbourne it is not difficult to realise.

The private railway line from Ridham Dock to the Sittingbourne Mill runs alongside the new mill, and it is obvious that haulage, carriage and handling have received a tremendous amount of careful consideration. I doubt if any "news" mill in this country can show an advantage in this connection over Messrs. Lloyd. In these dull times for many British paper mills it is cheering to note that those responsible are speeding up the new undertaking, and certainly Mr. Frank Lloyd and those associated with him have no fears as to the future of the British paper trade. Mr. Percy Denson and Mr. Miller gave me many interesting facts—some were in confidence and are not yet public property—but I may mention that the pulp will be mechanically shredded and blown into the potchers. This will save a considerable amount of labour and handling. Of late considerable economies have been effected in coal consumption at Sittingbourne, and the benefit of these experiments and experience will, of course, be applied to the Kemsley Mill. Mr. Richards was away on holiday, but I found Mr. Tidbury, assistant engineer, very courteous and well informed, and he gave me much valuable and interesting data. A visit to the wells affords convincing evidence that the water diviner who located the water rendered the district a real and lasting service. The water is there all right, and without this assured supply the erection of a great paper mill could not have been undertaken. Not only was the water expert right in the exact spot he pegged out, but he also prophesied with accuracy the depth at which water would be found, and was right in regard to the approximate yield.

The front of the mill faces south, and the buildings have a width of 330 ft., and they run back for a depth of 800 ft.—or nearly 300 yards. Conspicuous in the front of the mill is the foundation stone bearing the following inscription:—

This foundation Stone was laid by Frank Lloyd, Esq., in commemoration of his 50 years with Edward Lloyd, Limited, 17th August, 1923.

A silver trowel with an ivory handle was presented to Mr. Lloyd by Mr. W. L. Grant, architect, and Mr. A. Bishop, builder, who were in attendance whilst the stone was lowered into position.

Upon entering the space in the front of the building enclosed by lofty and very solid walls of brickwork, one comes upon the Shredder House, a spacious place that will store the raw material. In the Shredder House the pulp will be pneumatically conveyed through tubes to the Potcher House—which illustrates that one of the principles on which the mill is designed is that, as far as possible, all labour will be eliminated where mechanical science can be utilised. On the left front to the west of the building the Potcher House for Nos. 3 and 4 machines is being built. This is another spacious part of the mill, which is to be equipped with the latest devices for the preparation of the raw material.

One is struck with the massive nature of the brickwork. The main walls are 28 ins. thick to the first floor, and from there to the roof they are 18 ins. in thickness. The height of the walls is 54 ft.

The engine house and the potcher house extend from Nos. 3 and 4 potcher house to the east of the outer wall, and at the rear of the engine house is the boiler house, where also the shaft is being constructed. The building of the shaft is in the hands of Mr. R. B. Hilton, of Brockley, S. E., a member of the well-known Blackburn firm who built the big shaft at the Sittingbourne Mills. The shaft at Kemsley will be 150 ft. in height, and it has an interior diameter of 9 ft. It is being built with a single line of brickwork running in spiral fashion from the base to the summit, and some idea of its stability can be gained from the fact that it is being built on a base of 400 tons of concrete, embedded 15 ft. in the solid earth. It may be interesting to know that the first brick in the chimney shaft was laid by Mr. R. B. Miller. A present the shaft is about half-way up.

In the engine house the main engine will be a Sulzer (Swiss) horizontal reciprocating engine of 2,200 h. p. This will generate electric current at 2,200 volts, that will supply the electrical energy for the whole of the mill, for electricity will be the principal power here.

The potcher house is modelled on similar lines to the potcher house at No. 3 mill, Sittingbourne, with the advantage of having several modern improvements introduced.

The boiler house will be capable of housing ten Stirling boilers, but the present complement will be four.

Beyond the potcher house, and extending for 350 ft., with a width of 112 ft., is the machine house. Looking at the bewildering mass of steel framework and huge steel girders being swung into position, with workmen swarming all around, all going at top speed, one was struck with the vastness of the machine house. It is double the area of the machine house in No. 3 mill. At present it is intended to put down two machines, which will each turn out a sheet of paper 215 ins. wide, at the rate of 800 ft. a minute, which means 75 tons of paper a day. These will be the largest news-making machines in England. There are two machines of equal dimensions at the Abitibi Power and Paper Co., two at Belgo Paper Co., one at Donnacona Paper Co., and one at the Backus-Brooks Co., Canada; but there are no larger machines in the world. The machines will be driven by steam engines, using the Lloyd-Hutchison drive. The machine will be on a raised floor of enormous strength, as is the case at No. 3 mill.

Beyond the machine house will be the paper store, from which the reels of paper will be conveyed to Kemsley Wharf, a little distance beyond, for the waters of Milton Creek are at the back door of Kemsley Mill. It is the existence of the Creek and the Swale that has, like a magnet, drawn this hive of industry to their banks, for Ridham Dock is only about a mile from here.

The general stores and the engineers' shop are beyond the boiler house, to the west of the machine house. The engineers' shop, it may be added, will be fitted with some of the finest tools money can buy, capable of dealing with work on machines 275 ins. in width.

Kemsley Mill is a huge framework of steel, with brick panels. No timber at all is used in its construction. Nothing but bricks, steel, and cement are employed in the fabric, which should be as near fireproof as it is possible to have anything. The roofs will be covered with concrete, with lantern lights in every roof, so that there will be an abundance of light. At this mill the steel work will take all the load, which is evenly distributed—not the brick walls, which is the case with the Sittingbourne Mills. And what steel work it is! There are rolled steel girders weighing up to 11 tons, being raised or swung into position by powerful cranes. One of the cranes is worked by steam power, and another by electricity. The 11-ton girder is 54 ft. long. It was wonderful to see all this massive steel work manipulated by skilled craftsmen—to say nothing of the interlacing and criss-crossing of steel stays and other metal work, each length to bear its intended burden, all interwoven into one gigantic and seemingly invulnerable whole.

The electric current at present supplied to Kemsley is taken from the mills at Sittingbourne. The old engine house of the former Kemsley Brickworks has been converted into a transformer house, and here the current from Sittingbourne is transformed from 6,600 volts down to 430 volts, and distributed to those parts of Kemsley Works where it is required. This work was carried out by the firm's own electrical engineering staff.

Kemsley Dock has been reconstructed and dredged of mud, sufficient to provide two berths for barges, and craft are coming in and out of here continuously, unloading materials for the construction of the mill. All the steel work and other material are brought down by water, unloaded into wagons, and run on Messrs. Lloyd's railway into the works. Presently reels of paper will be conveyed from the new mill to the wharf, ready to be shipped to wherever it is wanted.

The old washbacks and the Kemsley rabbit warren have disappeared. The washbacks have been deepened and enlarged and have been converted into three large ponds, with reinforced concrete sides and bottoms. The ponds will obtain their water supply from the borings that have been made in the Meads, Milton. The water will be conveyed through 3-ft. pipes into the mill, and it will be returned through another line of pipes into another of these ponds, and the effluent will go into the Creek. All the drainage and water services, as well as the construction of the reservoirs, have been carried out by the firm's own staff, under the direction of Mr. A. A. Richards, chief engineer and Mr. [illegible], resident engineer.

The whole of the steel construction at Kemsley Mill is by Messrs. Redpath, Brown & Co., Ltd., London. The building contract is being carried out by Messrs. E. Bishop and Sons, Sittingbourne, under the supervision of Mr. A. Bishop. There are fifty-three bricklayers at work, and the contractors could do with 100 more. Bricklayers have been sought for all over the country, but it seems that there is a dearth of them—more is the pity, for the pace of the work is regulated by the bricklaying.

Kemsley Mill is being built from designs prepared in the firm's drawing office, which incorporate ideas culled from the United States, Canada, and other countries, with Mr. W. Leonard Grant, Sittingbourne, the supervising architect.

NO NORWEGIAN LOCKOUT

The threatened lockout of 15,000 or more pulp and paper mill workers in Norway has been averted. This is the information received by the American Paper and Pulp Association which has been keeping informed of conditions through cablegrams. Reports that the lockout had gone into effect were erroneous, and an agreement has been reached between the workers and the employers. A cablegram stating that the lockout, several times postponed, had finally gone into effect was followed by another message stating that the lockout had been averted at the last moment by an agreement which will prevent labor difficulties for many months ahead. Other messages, however, which also announced the lockout had been received elsewhere in the United States and had been given publicity, but the last minute settlement was not similarly announced. The lockout, therefore, was not at any time effective.

STATIONERS' BODY MEETS IN MONTREAL

Prominent representatives of business interests in the United States attended the annual meeting of the Stationers' Association of Montreal December 5, at the National Club. They included William H. Greenleaf, of the Carter's Company, formerly field secretary of the National Association of Stationers of the United States.

Election of officers resulted as follows: President, Robert Fortier; vice-president, J. Alf. Guay; secretary-treasurer, J. K. Thompson; executive committee, W. P. Crites, A. Valiquette, O. H. Manning, T. V. Bell, Paul Granger and W. E. Dawson.

PAPER MAN APPROVED MELLON'S PROPOSAL

New York, Dec. 8. A referendum taken by the American Paper and Pulp Association on Secretary Mellon's proposal for tax reduction has resulted in over 95 percent of those replying voting in favor of the Mellon proposal, and against a bonus for able-bodied veterans. This questionnaire was sent out so that the Association might be able to speak with authority as to the attitude of the paper industry on the tax program. The referendum provided that the federal government in the opinion of the industry, should do all within reason for the care of sick and wounded veterans. The first two questions were answered almost unanimously against the bonus, and for the tax proposal. Questions as to specific proposals of Secretary Mellon, varied only slightly from the replies to the general proposal.

Some Elementary, Practical, And Theoretical Notes on Beating[1]

By Mr. D. McNEILL, Guard Bridge Paper Mills

Mr McNeal opened by suggesting that the best way to study beating was to work on the beaters. Beating was, admittedly, an art, and that experience was essential before one could judge of beaten stuff. On the subject of "feel," he did not know of any instrument or method affording a better conclusion during the process of beating than the result of "feel" by a practised beaterman. He knew a man who could tell any brand of sulphite or soda wood pulp by the "feel" alone. A good beaterman should tackle his job something like this:—(1) He compares the sample with the furnish. (2) He estimates how long it will take to attain the desired result in the beaters at his disposal. (3) How many beaters, and which beaters, he will use. (4) He fills in a beater to make sure of his reckoning by feeling the half-stuff.

Mr. McNeil attached importance to the beaterman seeing the sample he is required to match, and observed that, as the temper of the steel in various plates and rolls varied, results in the beater necessarily varied. If fine, free stuff was required the hardest steel should be chosen; if soft or wet stuff was desired the whole mill was used; and if the tackle be hard and sharp it must be "gingerly" manipulated until appreciably dulled. When changing from soft to free stuff the rolls and plates should be sharpened up again by lowering the roll on the plate. Mr. McNeil referred to the different treatment in the beater of esparto as against wood, and said esparto requires a good deal of beating pressure to render the stock soft. When bronze bars are used there is practically no difference so far as sharpness is concerned. When a softened stuff was required the speed of the paper machine should never exceed the beating capacity, else the paper will lose its desired characteristics.

In many mills the beating capacity was inadequate to keep up with the speed at which the machines could make a good sheet. He next dealt with the subject of uniformity in raw materials used, and said that in the average beater mill the potchers or boating engines were from 10 to 30-cwt. capacity. If it were practicable to bring forward about 5 tons at a time many bleaching and beating irregularities would be eliminated. The addition of "broke" in haphazard quantities was obviously a bad practice, and it was an advantage to have large stuff-chests and intermediate stuff-chests in order to allow the contents of five or seven or more beaters to be mixed together. Careful refining was also a great factor contributing to regularity.

Mr. McNeil referred at length to the attainment of consistency in beating, and said, when the last ounce was taken out of the flybars, it was impossible to hope for regularity and consistency, and said that the freer the stock required the lighter the consistency. Rarely two beaters in the same mill gave identical results, and it would be found that the roll or plate of any one was nearly always more worn or newer than the other. Even new beaters gave varying results, the difference being, in his opinion, due to unequal fitting and roughness. By varying the stuff in one beater to suit the stuff in the other one could produce a "mean" result. In the ordinary type of hollander the beating factors were, roughly:—Shape and size of the trough; friction surface of the trough; height and shape of front rise or breast; and position, shape, height and adjustability of backfall; length, breadth, height and shape of the bedplate; material the bars are made from; the shape and thickness of the bars; bar spacing and condition and sharpness or dullness of the bars; shape of the cover; position and adjustability of the stuff doctor; width of spaces between the beater walls and the sides of the roll; and method of keeping these spaces clear.

On the question of furnish, he considered the factors were:—Condition of half-stuffs; consistency; spreading action; stuff friction; mixing qualities; time; temperature; acidity or alkalinity; length of machine wire · wire mesh; texture of wet felts; the great human factor, and the "feel."

Next the subject of the action of the beater on the stuff was referred to and the softness or wetness (hydration). He held the view that it was only when hydration could be chemically proved—such as with greaseproofs and the like—that it really took place, and he did not think that dehydration could take place either on the wire or at the press rolls. Hydration was probably the most complicated subject the student of beating had to face. Most of the literature on hydration made little distinction between absorption and inhibition and hydration. The effect of temperature was referred to, and Mr. McNeil dealt at some length with the mechanical and physical action of the beater, and considered that Dr. Sigurd Smith's work and other papers to be one of the best theoretical treatises on the subject. But Dr. Smith made two important omissions. One, that fibrages were not formed at the beginning of the action; and, secondly, that the cell contents spread transversely on the flybars in every good beater. In a simple experiment he had obtained results in agreement with Dr. Sigurd Smith's fibrage theory. Mr. McNeil dealt next with "spitting" and the importance of flybar spacing. It had been said that beating was the most important part of paper making but in his opinion the most important thing was the ability to write out a furnish to match a sample at a profit, and frequently it would be found that a standard furnish was originally made out by a beaterman.

Many old-fashioned hollanders were still in use on the best classes of paper, but where quality was the main object the human factor was the main contributer to the desired end. Mr. McNeill went on. A great many of the labor-saving devices in our industry save only the muscles of the workmen, allowing them to depend on machines instead of their own brains and initiative. Very few save a copper or make an improvement in quality. The nearer a mechanical contrivance is to perfection the less brain power is called for on the part of the operative, and, naturally, he thinks less of the operation and its results. Mr. McNeil suggested it would be interesting to watch a beater of the Sigurd Smith type fitted with a stone plate and an ordinary plate which could work in conjunction and independently on strong papers. He also outlined a model text-book on beating — a book compiled by the collaboration of a competent chemist and an engineer, with samples of the papers referred to in the book.

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[1] A report of an excellent paper by a practical beaterman presented at the Eighth Conference of the British Technical Section. From The Paper Maker.

Discussions

The Chairman, Capt. W. E. Nuttall, said the subject of "Beating" was a very complex one. One could not help admiring Mr. McNeil for his temerity in attempting to deal with such an enormous question in the little time at his disposal. To attempt to criticise the paper as a whole was almost impossible, for one did not know where to begin. Perhaps to him (the speaker) the most abiding impression from the paper was: What a wonderful man a beaterman was. How greatly dependent they were on the beaterman, and how important it was that they should be thoroughly educated and brought into contact with the best possible men. The next important thing was they wanted more beatermen like Mr. McNeil. That was the first time in the history of the Technical Section where they had had a paper on the operative side. He thought it should be the policy of the Technical Section to encourage them for all they were worth. (Canadian Technical Section please note.—Ed.) He hoped the Technical Section would work on those lines. He certainly thought Mr. McNeil had given every evidence of a great thinker, and took great interest in his work, and, if he was mistaken in some things, he was certainly pretty sound in others, and he thought he had a bright future in front of him, and he was sure they all hoped it might be so.

Mr. Baker agreed that these papers should be more fully discussed at the local Technical Section meetings, when they could give real consideration to a paper of the kind they had just heard, and which deserved the fullest consideration.

Dr. McDonald said that, on the subject of the degree of digestion, it would be interesting to know if he had any special ideas or figures to quote. They handled so many thousands of tons of soda and sulphite part cooked in such a manner they had no control of. He thought Mr. McNeil agreed it was important that their stuff should be properly cooked, for if they did not get rightly cooked stuff they could not do a good job. He personally thanked Mr. McNeil for his able paper.

Mr. Petrie said it was not uncommon, as Dr. McDonald had said, to find something wrong with the pulp—sometimes that would not beat. He had pressed it down a few times—he referred to the pulp they used with their esparto. Some of the pulp seemed to be hard and greasy and some was quite in the opposite direction. Therefore he concluded that the pulp did not come into the country uniform. Regarding the hollander beater, if properly loaded he believed it could not be touched. Why anybody could condemn the hollander he did not know. He should like to re-echo what Mr. Nuttall had said—he wished their mills had a few more men like Mr. McNeil.

Mr. P. B. Sadtler, Philadelphia representative of the Swenson Evaporator Co. has moved from 1309 Widener Bldg, and is now located at 1228 Spruce St., Philadelphia.

BOOK REVIEW

THE MANUFACTURE OF WOOD PULP BY THE SULFITE PROCESS (Die Fabrikation des Zellstoffes aus Holz Sulfitezellstoff), by Richard Dieckmann, is the title of volume two of the German series of handbooks on the "Technique and Practice of Paper Manufacture", which are under the general editorship of Professor Emil Heuser. This latest volume consists of 360 pages and contains 363 illustrations, besides two plans for a sulfite mill. It is published by the well-known firm of Otto Elsner, Berlin, and is offered to this continent for 5 dollars.

Volume one of this series, by Korschilgen and Selleger, was published somewhat over a year ago and treats of the use of rags in paper manufacture. This second volume, by Dieckmann, is devoted exclusively to the sulfite process for making pulp and, in every way, is as thorough as its predecessor. An unusual amount of space is consumed in describing machinery and allied equipment; also many domestic and foreign patents are reviewed.

In the first chapter the process is outlined from the historical standpoint. The effect of the War on wood and straw pulp production in Germany is graphically shown: there is a decrease from 840,000 tons, in 1914, to 262,000 tons, in 1920. Chapter two is concerned with water purification, with many detailed descriptions of purification systems of German manufacture. In the first part of chapter three the author considers the properties of pulp wood and its decay; in the remaining section he treats of the handling, barking, and chipping processes together with the different kinds of machinery used. Chapter four, one of the longest, deals with the preparation of the cooking acid. Of little interest would be the section on pyrites to the Canadian or American manufacturer, but the one on gas cooling and absorption, where both the tank and tower systems are considered in detail, deserves more than passing mention. The following chapter is an excellent treatise on digester and valve construction, and the part on the cooking process constitutes a good review of the recent literature on the subject. There are several poorly reproduced cooking charts and this is true of many illustrations in the text.

Chapter six, consisting of 94 pages, is concerned with the refining and bleaching operations. It is one of the best and most complete chapters in the book. In the first part of the succeeding chapter four pages are given to fiber recovery, while the major part is devoted to the utilization or waste sulfite liquor for the manufacture of ethyl alcohol, by fermentation, and as a fuel. The final chapter, somewhat different from the others, enumerates a few of the more important methods of chemical analysis incident to the sulfite process, and also contains addenda to the other chapters.

This series of books is on a somewhat different basis than the textbooks prepared by the Canadian and American Technical Associations, but perhaps this difference has already been sufficiently emphasized. The typography of the book and the paper on which it is printed distinctly savor of war times.—J. L. P.

NOTE: — Orders may be placed with Pulp and Paper Magazine, and must be accompanied by remittance.

Woodlands Section

THE STORY OF A FAIRY GODMOTHER AND HER BLIND EYE

(Reprinted from "The Canadia", Kamloops, B.C.)

Across the placid waters of the Straits of Juan de Fuca from Victoria, B.C., is the American town of Port Angeles. The "Haven of the Angels" it calls itself, but for a generation it has been regarded as a joke by most Victorians and the music hall jester. Yet, to some Victorians, Port Angeles spelled "Tragedy", which was made more real by the annual arrival of mail sacks containing a deluge of notices of taxes due on lots in Port Angeles subdivisions nearer to the peaks of the snowclad Olympics than to the Pacific-kissed sands on the shore of the "Haven of the Angels." Hundreds of these lots returned to their original owners, who no doubt cursed their luck, but some of the "easy" Victorians hung on to their real estate, and their annual pilgrimages to pay their taxes there were just like Fourth of July celebrations to the Rip Van Winkles of Port Angeles. For a long period the undertaker was the busiest little man there, and he did his work so well that finally none were left but the tax collector, his butcher, his baker and his mother-in-law, and it seemed as if Port Angeles would soon be as easy to find as the Continent of Atlantis. Its epitaph was written:

"Yes, Dust to Dust,
And Awshes to Awshes,
A town went Bust
Where Water now Washes."

The epitaph is now hidden under a sawdust pile, and each day sees it farther and farther from the possibility of use. Port Angeles is not dead. The "Haven of the Angels" is no longer a joke. The breezes from off the Olympics waft odors of a healthy industrial state into the nostrils of Victorians. Those of them who retained their boom time town lots are now reaping the harvest of what they term their faith. Port Angeles is now a hustling, thriving "go-getting" burg. For a considerable period every steamer leaving Victoria for Port Angeles has taken whole familes to help the little Yankee town make that sawdust pile higher and bury the epitaph deeper and deeper, until now it is estimated 20 per cent. of those who live within the borders of the "Haven of the Angels" are from Victoria. That only means that 1,500 people no longer live in Victoria and contribute towards the prosperity of British Columbia's capital. They're gone, they're lost to Victoria, and this loss means that the requirements of 1,642,500 meals per year will not be purchased in Victoria. All of the Fifteen Hundred wore clothes, too. It means a loss of 254,500 loaves of bread to Victoria bakers per year, a loss of $5,400 to the city for water. Most of all, it means the loss to Canada of One Thousand Five Hundred Canadians. They will not come back; they've gone to aid in the development of a competing nation.

Yes, it's a wonderful thing for Port Angeles. Well might you ask: "Has Port Angeles a Fairy Godmother?" She sure has, Brother, and the fairy is nothing else than the short-and-'hind sightedness of loyal Canadian legislators who permit good Canadian timber to be exported to the United States for manufacture into lumber. Our timber goes, our people go. Our heritage will be acres of stumps.

ANOTHER WARNING

There are people in Canada who delude themselves with the fiction that the people of the United States are still blessed with abundant supplies of timber; that this country has in inexhaustible stock; and that we run no risk of depletion by allowing wholesale destruction of our wood. Nothing will convince such people of their error except experience. If remedies be not applied and the persons to whom we have reference be privileged to live for less than a quarter of a century, they are likely to be convinced by seeing a stark wilderness which will have taken the place of wooded lands.

The Boston Transcript is not suffering under any illusions in regard to the conditions in the United States. Nor are other well informed persons in that country. The pulp and paper manufacturers over there are not blind. They know. They realize that Canada is the source upon which they must largely depend for some years, and they are taking toll as fast as we allow them.

The Transcript, speaking of the United States, remarks: "It is difficult to realize that there are people of unquestioned intelligence in this country who do not seem to realize our national timber situation." To which we might say "amen". We have them in Canada. We have them in Nova Scotia. "So much has been said and written on this subject during the past two or three years," adds the Transcript, "that it would naturally be supposed that thinking people everywhere ought to be reasonably well informed as to the fundamental facts." We might very well apply the language to our own country. 'Tis true. But the truth does not seem to prevail.

The question is no longer a theoretical one, the Transcript points out. Nor is it one in which alone posterity is concerned. It is a live question for the present generation. "What are we to do for lumber?" The question goes home to every one.

"Even if the utmost were done, and done promptly," remarks the Transcript- and its words are deadly prophetic — "**the present generation is destined to feel severely the pinch of timber poverty that might have been averted had wise counsels been listened to earlier.**"

But many of the present generation will not even now be warned, either in the United States or in this country. They are satisfied to pursue the path of improvidence, and continue to cut and hew, burn and destroy without taking thought about the calamitous future that draws closer and closer every year. — Halifax Herald.

REVIEW OF FORESTRY LITERATURE

B-3 Proceedings of Forest Protection Conference of the Quebec Forest Protection Association, held at Montreal, January 23, 1923.

"**The Forests of Quebec,**" by G. G. Piché, Provincial Forester. Past and present methods of logging are not conducive to the regrowth of high quality forest, since it has always been the practice to remove the best trees of the best species, leaving the inferior species to reproduce. Thus, the forest has deteriorated in quality and quantity. Logging of hardwoods in mixed stands is highly desirable, to encourage growth of the more valuable conifers. Repeated forest fires have also contributed very largely to the deterioration of the forest in area and quality. Great damage has been caused by the larch saw-fly, balsam budworm and other forest insects, the latter having destroyed at least 100,000,000 cords of pulpwood, largely balsam. Relation of disposal of logging slash to protection from fire and insects, and urgent need for solution of this problem. Regulation of the cut through preparation of logging plans, subject to approval by the Government. The cut must be restricted to the annual growth. "**Why Forest protection is Necessary,"—From the Forester's Point of View**, by Dr. C. D. Howe. Protection of cut-over and burned-over lands is much more important than protection of standing timber. The former is the greater hazard, though it generally receives the lesser protection. Of the area burned, by far the greater proportion is of the former. Successive fires destroy the possibility of natural regeneration, yet the cut-over lands are the ones upon which we must largely depend for our future production. Great loss from soil-wastage on severely burned areas. Effect on surface drainage,—floods and droughts. Our forest protection is not adequate, but it must be made so if our forest industries are to continue. "**From the Operator's Point of View,**" by W. Gerard Power and Robert P. Kernan. Adequate protection is essential to the permanence of our forest industries. Lack of this means heavy loss in cost of plant and river improvements. Need for larger expendture on personnel and equipment. "**From the Public's Point of View,**" by Prof. Stephen Leacock. Forest protection and conservation is one of the most important economic tasks of our day and generation. "**Wireless Telephony in the Forest**", by Lieut. F. L. Rash. The use of this equipment in forest protection is just beginning, and has been the subject of considerable experiment in co-operation between the United States Army and the United States Forest Service. Prospects for future usefulness appear good. "**Co-operative Forest Protection**" by E. T. Allen. Co-operative fire-preventive organization in the Pacific Northwestern States dates back to 1906. Federal, State and private agencies now combine their efforts. The Western Forestry and Conservation Association was formed in 1909, and is effective in Washington, Oregon, California, Idaho and Montana. Member associations have a contributing privately-owned acreage of 22 million acres and patrol about 35 million acres. Expenditures on forest protection vary from $500,000. to nearly $2,000,000. in the worst years Assessments on forest owners vary from two or three cents per acre per year in Montana and California, to three or four cents and up to twenty-seven cents in Oregon and Washington, and from an average of eight to ten cents in Northern Idaho up to forty cents in a very bad season. It pays to spend enough to get adequate protection. The costs must be reckoned as insurance on values. Compare with taxes and interest, they are not excessive. Difficulties of organization; members dropping out, etc. Problem resulting from increase in area of cut-over land; this comprises a greater hazard than timber, but is difficult to collect high costs from. Fire organization for logging camps, to supplement work by Association. Importance of publicity in forest fire prevention. Need to increase expenditure for this in fair proportion to expenditure in other branches. Educational publicity reduces the number of fires and therefore the cost of fire-fighting, and is, on that account, a good, as well as a necessary, investment.-C.L.

EASTERN INTERNATIONAL DOG-SLED DERBY RACE

Gulf Pulp & Paper Co. will enter a team of huskies from Clarke City, on the North Shore of the St. Lawrence. To be driven by a French-Canadian woodsman.

Price Bros. will enter two teams of huskies from Esquimaux Point, on the North Shore of the St. Lawrence. One to be driven by Joe Dupuis, a seal hunter and winner of fourth place last winter's race, and the other team, will be driven by a woodsman.

J. E. Letourneau, prospector, will enter a team of mastiffs and St. Bernards from Montmagny, P. Q. and drive the team himself.

Power Lumber Co. will enter a team of Eskimo dogs from Esquimaux Point, to be driven by a trapper from the Labrador coast.

J. R. Vatcher, French-Canadian trapper, will enter a team of huskies from Sault au Venton, on the North Shore of the St. Lawrence, and drive it himself.

Leo Beaulieu, French-Canadian woodsman, will enter a team of mastiffs and St. Bernards from Cap Rouge, P. Q. and drive it himself.

Brown Corporation will enter two teams of mastiffs and St. Bernards, one to be driven by Jean Lebe, Riviere Jaune, P. Q., French-Canadian world war scout, hunter, trapper, woodsman, member of one of Capt. Bernier's Arctic trips and winner of the race last winter, and the other team will be driven by Henri Skeene, La Loutre, P. Q., Indian trader and trapper, and winner of second place in last winter's race.

St. Regis Paper Co. will enter a team of Newfoundland dogs from Oscalnoo, P. Q., to be driven by an Indian trapper.

Edward P. Clark, West Milan, N. H., trader and trapper will enter a team of Eskimo dogs from Labrador and drive it himself. Clark came in fifth in the race last winter.

Philip Molloy, Berlin, N. H., will enter a team of seven huskies, and drive it himself.

Arthur E. Walden, Wonalancet, N. H., wll enter a team of seven huskies and drive it. Walden won the race in Berlin, N. H. in 1922.

Patrick Nolan, former prospector, St. Sauveur, P. Q., will enter a team of great Danes and drive it himself.

Holt, Renfrew & Co., furriers, Quebec, P. Q., will enter a team of St. Bernards and wolfhounds to be driven by Joe Chevrette, The Northwestern Alaska Chamber of Commerce is keenly interested in the race and is now studying the possibility of entering a team to represent Alaska in the race.

A few more entries are expected from the North Shore of the St. Lawrence and from the Abitibi mining district. As navigation to the North Shore will soon close, it will be necessary for teams from this district to mush approximately 400 miles to Quebec.

It is expected that two more American teams will be entered. An American team driven by Walden won the gold cup in 1922. The prize monies will approximate about $2,000.

Jean Lebel, winner of last winter's race, has suffered a great loss in the death of his leader "Moose." This dog, possessing almost human intelligence, great strength and endurance, was recently killed by an automobile. Lebel is now busily engaged in training another dog to take the place of his former leader, and is confident that he will lead the field again this winter.

The dog race will approximate 120 miles to be run in three days, and entries are open to any individual or association of individuals in the United States and Canada.

There will also be international competitions in ski-ing snowshoeing, hockey, curling, skating, ski-joring, trotting races, ski-jumping, etc. An ice palace will be constructed, and pari-mutuel betting machines will be used in connection with the trotting races.

There will also be short races of about 2 miles for teams comprised of 2 dogs.

The prizes for the 120 miles dog-sled race will be $1,000 for first, and a silver cup and one-third win towards the permanent ownership of the Eastern International Dog-Sled Derby Cup and a blue ribbon. Second prize $400, third prize $300, fourth prize $200, and fifth prize $100. Entrance fee of $10.00 should be sent to The Eastern International Dog-Sled Derby Club, Inc., Quebec, P. Q , before January 31, 1924.

NEW PULP PLANT MAY COST MILLION

The "Vancouver Province" prints a report from Prince Rupert that plans have been prepared and machinery ordered for a ninety-ton bleached sulphite pulp plant, the building and machinery for which will cost from $800,000 to $1,000,000. This plant will be erected at Prince Rupert by the Prince Rupert Sulphite Fibre Co. Limited, which has recently purchased the Emerson mill and timber limits. The proposal is to erect at Prince Rupert eight concrete buildings, the plant being just twice the size that at Swanson Bay, and the whole to employ from 600 to 700 men. It will take seven or eight months to get the machinery, some of which has had to be ordered in Europe. In the meantime, the site will be prepared and the buildings erected and the work on this is to start in a short time.

If sufficient orders can be secured, the present sawmill will be started on an early date, as it is in such shape that it could be got ready for operation in a month. It is expected that the capacity of the sawmill will be increased so that it may carry out the idea of manufacturing the better grade of timber into high-grade lumber and using the lower grade timber for pulp.

The erection of a new wharf is part of the plant of the company, there being no dock at present at the mill. It is proposed to use city water and power in the earlier stages of the work.

TAX ON OIL WOULD HURT POWELL RIVER

In connection with a discussion by Provincial authorities in British Columbia of a tax on imports of fuel oil ostensibly for revenue purposes, Mr Norman Lang, manager of the Powell River Co., is reported to have stated that the proposed tax would mean an additional cost of $50,000 per year to his company. It would be impossible, he stated, for the company to revert to the use of coal for fuel, and it was felt at the present time that exceptionally high costs were being paid regardless of the fact that the company's charges for paper were standard with those all over the world.

Mr. Lang asked for some encouragement for the industry, stating that it was proposed to spend $5,000,'000 on development. The company did not wish to go to Alaska or Seattle, but wanted to manufacture an additional 180,000 tons of paper in this Province. He said that high taxes were being pand by the company and a loss of over $10,000 borne annually in order to keep prices uniform. It was too much to impose an additional tax of $50,000 on his company.

WHALEN RECEIVER MAY BE CHANGED

An interesting report appears in the Vancouver Sun to the effect that an application was to be made to the court to have George F. Gyles, receiver for the Whalen Pulp and Paper Company, replaced by E. M. Mills of the Zellerback Paper Company of San Francisco, and President and general manager of the Washington Pulp & Paper Co.

It is understood that the application has been fathered by the bond holders' committee in eastern Canada and is interpreted here as meaning that the last pulp concern in British Columbia under Canadian financing, may pass to the control of United States interests.

The Pacific Mills, one of the best pulp manufacturing plants on the coast, was acquired by American financiers for a comparatively small figure and creditors of the Whalen company are said to be fearful that the Whalen plant may be sold under similar circumstances. The Whalen company had reached a point where three pulp plants were ready to feed a paper mill, but difficulties in financing the paper mill were experienced.

Plans are being made by the creditors to have the provincial government take a hand in the situation, it is stated.—(A despatch of Dec.7 reports Mr. Mills as having been appointed.)

COAL

(Continued from page 1212)

graphite, which is a still older stage in its development than anthracite. We have discussed the reasons why coal containing a great deal of any constituent is difficult to burn efficiently. It is natural for us to look for one of the proper combination to burn to advantage in almost any furnace. Some seams do produce coal that is in the stage of formation half way between anthracite and bituminous. It is easy coal to handle and high in B.t.u., therefore very popular and priced accordingly. The quantity of it actually reaching this part of Canada is not large though a great deal of coal of the same name is sold here every year. If you pay for such a grade, be sure you get it.

Blessed are the happiness makers who know how to shine on one's gloom with their cheer.—Henry Ward Beecher.

TECHNICAL SECTION

REVIEW OF RECENT LITERATURE

RAW MATERIALS

A-3 Composition of Different Straws and the Pulps Resulting From Them by Different Processes. Th. E. BLASWEILER. **Papierfabr.** 21, 309-311 (July 1, 1923); 321-322 (July 8, 1923); 361-365 (Aug. 5, 1923); 373-376 (Aug. 12, 1923). The composition of oat straw is given as 45.49% cellulose, 24.70% pentosan, and 29.81% lignin, on the dry and ash-free basis. The values for rye straw are, respectively, 42, 83, 26.25, 30,-52, and for rape straw 32.09, 25.52, and 42.39. Oat husks contain less cellulose and more pentosans and lignin. Comparative digestion experiments were carried out with sodium hydroxide, calcium oxide, sodium carbonate, sodium sulphide, and sodium bisulphite. The tests with sodium hydroxide included treatment under pressure, in an open vessel, Steffen's method, and according to Beckman in the cold. In general the sodium hydroxide effected the best solution of the incrustations. The lignin resisted the action of most of the chemicals but dissolved the pentosans. -J.L.P.

A-3 Pulp From Reeds. R. DIECKMANN. **Papierfabr.** 21, 337 (July 22, 1923). Polemic against A. Klein, in this journal, 21, 303 (June 23, 1923).-J.L.P.

A-3 Hydrophytes as Raw Material for Paper. ANON. **Wochbl. Papierfabr.** 54, 1535-1536 (June 2, 1923). The use of aquatic reeds and rushes for paper manufacture has markedly increased within the last two years in Germany. Their growth and harvesting is described.-J.L.P.

A-0 Papermaking Materials. UHLEMANN. **Papierfabr. (Fest u. Ausland Heft)** 21, 37-38 (June 9, 1923). A brief account of the raw materials for paper making from the earliest times to the present.-J.L.P.

A-1 The causes of Wood Decay and its Prevention. FRITZ HOYER. **Papierfabr. (Fest u. Ausland Heft.)** 21, 65-74 (June 9, 1923). The subject of wood decay and its prevention is covered in a general way.-J.L.P.

A-5 Straw Paper and Straw Pulp Mills. GEORG KOTHEN. **Papierfabr. (Fest u. Ausland Heft)** 21, 74-77 (June 9, 1923). The following topics are discussed with respect to the utilization of straw for the manufacture of paper supply and storage, disintegrating machines, cooking process, kollergang treatment, beating and the conversion to paper.-J.L.P.

A-3 Reed Materials. WILLI SCHACHT. **Papierfabr. (Fest u. Ausland Heft)** 21, 63-64 (June 9, 1923). A review of the use of reeds in papermaking.-J.L.P.

A-1 The Constituents of Pulpwood. RUDOLF SIEBER. **Papierfabr.** 21, 317-321 (July 8, 1923). An address in which elaboration is made on the theme that wood consists mainly of carbohydrates existing in all degrees of polymerisation with consequent varying ease of hydrolysis. Lignin is probably a cyclic body. -J.L.P.

K-4 Defibering and Purification of Old Paper. GEORGE KOLB. Ger. pat. 370,000. **Wochbl. Papierfabr.** 54, 2[illegible] (Aug. [illegible] 1923). [illegible] paper is suspended in a liquid [illegible] subjected to a mechanical agitation in such a manner that the mixture cannot assume the same speed as the agitator. A loosening of the ink and colors on the surface of the paper is effected. Ger. pat. 370,001, addition to the preceding one, describes a mechanical arrangement by which the papers are treated.-J.L.P.

D-4 F-0 Process for the Manufacture of Paper Pulp. PIERRE HENNIQUE. Fr. pat. 554,140. Before grinding or cooking the wood is treated by known methods to remove the sap by subjecting to air, water, steam, alcohol, benzine, or other solvent, under pressure, or by subjecting to vacuum, or by a combination of the two methods.-A.P.C.

K-4 Pulping Paper Stock. F. P. MILLER. U.S. pat. 1,455,594, May 15, 1923. Raw paper is first treated in a digester to soften the pulp and paper and the material discharged from the digester is subjected to the action of a jet of water under pressure. The pulp is then passed with the water through a screen, coarse and fine stock are separated, strings and the like are removed from the coarse portion, and the latter is again mixed with the fine portion. The combined stock is passed over a screen and the fine particles passing through the screen are led to a stuff chest and coarse particles retained by the screen are let to a beating engine, reduced, screened and then also led to a stuff chest.-A.P.-C.

A-1; E-0 The Decomposition of Wood by Phenol. EBERHARD LEGELLER. **Cellulosechemie.** 4, 61-62 (July 29, 1923). Cellulose is attacked by aqueous solutions of phenol, hence it should be employed in as nearly anhydrous condition as possible. The temperature should be 70-80° C. to avoid loss, and the acid strength should be adjusted so that when 55% of the wood is dissolved the reaction comes to an end. Good results were obtained with sawdust at 100° C. with 0.1% sulphuric acid, by weight or at 80° S. with 1.0% acid in 4 to 5 hr. The yield under favorable conditions is 45% of the weight of the dry wood. The phenol was recovered in three ways: direct distillation, steam distillation, and vacuum distillation. 45 kg. of purified pulp from 100 kg. dry wood consumed 36 kg. phenol which probably combined with the non-cellulose constituents to form a condensation product.-J.L.P.

A-3 Chemical Composition and Digestibility of Bagasse and Rice Straw. HACHIRO KUMAGAWA and KENKICHI SHIMOMURA. **Z. Angew. Chem.** 36, 414-416 (1923); **Chem. Abs.** 17, 3419. Complete analyses are given of the crude bagasse from Formosa, of pith and fiber separately and of rice straw. The difference in composition of fiber and pith is not very marked. The pure cellulose content of bagasse on moisture-free basis is 37.8%, of rice straw, 44.2%. The ash in bagasse is low, 2.6%, in rice straw high, 16%, but both contain about 80% silica. The large amount, 25 to 30%, of pith in bagasse makes mechanical separation from fiber necessary, as otherwise excessive quantities of chemicals are required. The complete removal of sugars by washing is most important to [illegible] formation of dark color during cooking. Laboratory experiments with bagasse, using the sulphite process with calcium oxide and magnesium oxide in varying proportions, indicated a probable yield in practice of 50 to 55% pulp, from which only a yellowish paper could be made. The pulp made with magnesium oxide in addition to calcium oxide is easier to bleach. It is always high in pentosans. Different modifications of the sulphate process with bagasse yielded 55 to 60% pulp, again high in pentosans but easier to bleach than sulphite pulp. Good yields of readily bleached pulp were also obtained by Lachmann's method (Ger. pat. 361,992). The use of sodium hydroxide and chlorine likewise furnished pulp which could be bleached white, but the yield was only 45%. Rice straw fiber contains less cellulose, pentosans and lignin, than bagasse fiber. The sulphite method gave satisfactory results with this raw material, yielding perfectly white pulp, high in ash, however, does not affect its suitability for paper making. But the yield is only 40 to 45%. The sulphate process also gave better results than with bagasse, both cooking and bleaching being accomplished more easily. The yield is only 35 to 40%, again high in ash. The silica seems to act as a filler and binder. Sodium hydroxide plus chlorine also gave excellent white pulp with a yield of 35%. On a manufacturing scale results different from those in the laboratory may be obtained. In a general way, bagasse is a more valuable raw material than rice straw, because the yield is higher and the fiber is smoother and longer (2 to 4 mm. for bagasse, 0.4 to 2 mm. for rice straw).-C.J.W.

A-3 Chemistry of Japanese Plants. Proximate analysis of Karafuto wood. NISASHI NAKAMURA. **Mem. Col. Sci. Kyoto Imp. Univ.** 6, 295-304 (1923); **Chem. Abs.** 17, 3418. Yezo-matsu (**Picea ajanensis, Fisch.**) and Todo-atsu (**Abies aaschalinensis,** Marsters), which are the principal constituents of the forests of Karafuto island, are regarded as the most important pulp materials in Japan. This study was undertaken to determine the proximate composition of the wood with reference to the manufacture of pulp. The content of moisture, ash, protein, nitrogen, resin, lignin, pentosans, hexosans and cellulose of both species were determined. Todo-matsu contains more pentosans, hexosans and less cellulose than does Yezo-matsu.-C.J.W.

TESTING

A-14 Simple Paper Testing Procedure. W. HERZBERG. **Mitt. Materialprufungsamt** 6, (1922); **Papierfabr.** 21, 343-346 (July 22, 1923); **Wochlb. Papierfabr.** 54,2404-2405 (Aug. 23, 1923). The following ten tests for paper, which are easily carried out without special apparatus or knowledge, are described briefly: resistance to crumbling and rubbing, thickness, weights per sq. m. and per cu. dm., ash, groundwood detection, sizing, sunlight, resistance to grease or oil, and distinction between genuine and artificial parchment.-J.L.P.

A-14 Behavior of Bag Paper at 80° C. W. HERZBERG. **Wochbl. Papierfabr.** 54, 2059-2060 (July 21, 1923). The results of several tests on bag paper employed for holding cement at a temperature between 60° and 80° C. are tabulated. After drying for five hours at 80° C. the paper contained only 15% of its original moisture, the tearing length was greater, the per cent stretch smaller, and the folding endurance was about 1% of the original. A subsequent 24 hr. seasoning, at 65% humidity, brought all the values close to normal. The few tests demonstrated that paper heated to 80° C. becomes brittle and until it has absorbed sufficient moisture from the air it is sensitive to mechanical treatment.-J.L.P.

A-14 The Influence of Atmospheric Moisture on Paper. GEORG SCHINKEL. **Wochbl. Papierfabr.** 54, 2268-2272 (Aug. 11, 1923). When paper absorbs moisture two kinds of phenomena occur: a swelling of the fibers, and a contraction of the sheet. With moist paper under pressure the concentration changes to expansion under certain conditions. The chief requirement for paper storage is that the atmospheric moisture and temperature be as nearly constant as possible. Data are tabulated from experiments with twelve papers, in the form of discs, exposed to humidities of 96, 85 and 70%. The surface changes with paper made from chemical pulp are greater than that made from mechanical pulp.-J.L.P.

DRIERS AND DRYING

K-12 R-6 Heat Recovery From Machine Room Vapor. J. O. ROSS. **Pulp & Paper** 21, 667-670 (July 5, 1923). After briefly showing the importance of the heat carried out by the vapors rising from the paper machine, the author describes the Briner economizer designed to recover part of this heat. It consists of a series of chambers or channels separated by thin metal sheets (wrought iron). The hot vapor from the machine passes horizontally through one series of the channels and the cold air supply for the machine room is drawn vertically downwards through the alternating channels. Figures are given of its performance in several mills under varying conditions. It really acts as a balance valve on the weather, considerable drops in outside temperature requiring but little more steam for ventilating the machine room. In one instance the return was about 70% on the investment.-A.P-C.

K-12 Report on Drying of Paper. S. B. JONES and and W. F. GOLDSMITH. **Paper Trade J.** 77, No. 1, 49-55 (July 5, 1923). A very detailed report of a test made to determine the efficiency of paper machine driers at the Pejepscot mill.-A.P.-C.

K-12 Efficiency of Paper Machine Driers. JOHN E. ALEXANDER. **Paper Trade** J. 77, No. 1, 56 (July 5. 1923). In order to obtain highest efficiency or driers the inside should be ground and polished as well as the outside, and the inside and outside should be systematically cleaned to remove scale and films.-A.P.-C.

N-0 Heat Economy in the Paper Industry. ERNST. BLAU. **Papierfabr.** (Frest u. Ausland Heft) 21, 84-96 (June 9, 1923). A review of the devices and methods for the economical and efficient use of heat in the paper industry.-J.L.P.

K-12 Paper Machine Suction Box. A. B.MEKANISKA VERKSTED. Fr. pat. 554,707. Within the suction box is one (or more) grooved or perforated rolls rotating at a peripheral velocity equal to the speed of the wire. The upper edges of the suction box extend quite close to the roll so that the wire is practically free from suction except when actually in contact with the roll. The roll may also be made to act as a guide roll.-A.P.-C.

K-12 R-12 Figures on the Cost of Paper Drying. JOHN E. ALEXANDER. **Paper Trade J.** 77, No. 4, 47-48 (July 26, 1923); cf. No. 8, 43-45 (Aug. 23, 1923); **World's Paper Trade Rev.** 80, No. 8, 620-624 (Aug. 24

(Continued on page 1224)

PULP AND PAPER NEWS

The Canadian Barking Drum Company have received contracts for one drum each from the St. Maurice Paper Company, for their plant at Cap Madeleine, Three Rivers, Que., and the Glengarry Pulp and Paper Company, of Cornwall, Ont.

J. A. Willoughby, of Georgetown, Ont., who is president of the Georgetown Coated Paper Mills, and is an enthusiastic exponent of golf, having placed his splendid private grounds at the disposal of the golf players of Georgetown, was recently presented with a purse of gold at a banquet in that town.

J. T. McDougall, Crown Timber Agent of North Bay, Ont., says in regard to conditions in that district that the cut of pine and pulpwood is normal. Some difficulty was met with earlier in the season in the way of securing men but at the present time all camps have a fair supply. Generally speaking, he says, the weather conditions have been good.

Harvesting of pulpwood in Northern Ontario has begun auspiciously. A report from the Abitibi Power & Paper Company says that the total cut from the company's limits up to October 31 was 36,090 cords, which is about thirty per cent of the total amount for the season. Snow is now being awaited and if it arrives soon the working force hopes to haul the logs in rapidly. In that case, the season should be a record one. The letter sent out by the Provincial Department of Forests may have had some effect in helping the settlers in Northern Ontario to dispose of their own supplies of pulpwood to advantage. This request was to the effect that the pulp companies should buy from the settlers whenever possible. It is noteworthy in connection with the Iroquois Falls plant that the purchase from settlers up till October 31 aggregated 37,190 cords, and considerable purchases have been made since then.

The Glengarry Pulp and Paper Company, Limited, at Cornwall, Ont., which was recently granted an Ontario charter, expect to make some changes affecting the efficiency of the plant and will install a drum barker and hydraulic pressing equipment later on. The plant has been in continuous operation and the company looks forward to a continuing good demand for their product for both home and foreign account. They state that the market conditions at present are rather easy, chiefly due to improved water conditions in the United States, but with the advent of cold weather a materially stimulated enquiry, with prices back to a higher level is anticipated.

A party of about 150 men left Toronto on Dec. 6 for the lumber camps in the vicinity of Sudbury and Capreol. This marked the third such party to leave for the north country during the week and materially reduces the number of those on the unemployed list. While most of those going lumbering were single men, there was also a goodly number of married men among them. Owing to the lateness of the snow in the northern section of the province this year, the season has been somewhat backward for timber and pulpwood cutting, but the demand for labor in the camps is now reported to be exceptionally good.

Plans whereby western wheat straw will be utilized for the making of pulp for paper manufacturers by a hitherto untried process are being developed, according to M. Dolphus, a prominent banker who visited Winnipeg a few days ago in connection with the project.

An early morning fire was discovered by the night constable a few days ago in the office of the Clinton News-Record, at Clinton, Ont., owned by G. E. Hall. Owing to the prompt appearance of the fire brigade the fire was confined to the stock room on the second floor but the lower floor suffered considerable damage from water.

Addressing the Canadian Club of Simcoe, Ont., a few days ago, E. J. Zavitz, the Provincial Forester of Ontario, said that the lumber and pulp and paper industry in Ontario had absorbed a capital investment of $300,000,000, provided employment for 42,000 persons, with a payroll of $36,000,000, and produced products valued at $112,000,000 annually. The total export value of these products was $200,000,000 and turned the trade balance of the country in its favor. The forests, too, provided a provincial revenue of $4,000,000. Mr. Zavitz described the work of the forestry branch of the Department which now has twenty-five graduates in service.

The opening of the new six-story addition to the Ault & Wiborg Company's printing ink plant at 19 Charlotte Street, Toronto, a few days ago, was marked by a celebration which included a euchre and dance to the employees and a buffet luncheon. The event also marks the twenty-second anniversary of the opening by A. C. Ransom, president, and F. Hildon, superintendent, of the plant in Toronto, which has shown great strides.

A telegram received in Toronto a few days ago announced the death in Calgary of W. E. King, a former representative in Alberta of Miller & Richard, type founders, Toronto. He was widely known in printing and publishing circles both in Ontario and Alberta.

The Toronto Carton Club, at several meetings recently, has had under discussion the training of female help to make solid paper boxes. While a uniform policy was not decided upon, it was recognized that one factory working alone could not accomplish the desired object of having on hand sufficient trained help to satisfy the demand for paper boxes according to the ebb and flow of demand. The final conclusion arrived at was that while it is left to the individual judgment of each manufacturer to determine his own method of training help, the different firms were urged to give serious heed to the matter and devise his own plan for the solution of the problem.

With power to carry on business as lumber and pulpwood operators Biglow and Malseed, Limited, with headquarters at Timmins, Ont., has been granted an Ontario charter. The authorized capital is $40,000.

Meetings of the directors of the Provincial Paper Mills, Limited, and the Interlake Tissue Mills Limited, were held at the head offices of both companies in Toronto last week when routine business was transacted. The directors expressed themselves as fairly well satisfied with present business conditions and were optimistic in regard to the outlook for the coming year.

D. B. Sparks, of Shanghai, China, who sells the products of a number of Canadian paper mills in the Orient, is in Canada on a business trip.

A. L. Parker, of Montreal, agents for the Inveresk Paper Company, Limited, Musselburgh, Scotland, was a business visitor in Toronto last week.

Toronto was visted last week by two well-known Norwegian paper manufacturers in the persons of Carl

Svendsen, of Vittingfos Brug Paper Mills, Holmstrand, Norway, and Sig. I. Hanssen, of the Sande Traesliperi groundwood mill at Sande in Vestfold, Norway. Both gentlemen are spending some time in Canada visiting a number of the leading pulp and paper mills in the search for new ideas in manufacture.

An interesting meeting of the employees of the Provincial Paper Mills, Limited, Thorold, took place in the Thorold town hall recently for the purpose of inaugurating an intensive accident prevention campaign throughout the plant. The meeting was opened by Charles Buss, general superintendent of the plant, who called for nominations for chairman, when F. M. Cushing was selected for the position. The purpose of the meeting, namely the re-organization of the accident prevention committee, was outlined by Mr. Cushing, after which brief addresses were given by Elmer Tolstead, Chicago, consulting safety engineer; A. P. Costigane, secretary-engineer of the Ontario Pulp and Paper Makers' Safety Association, and Jack Halliday, master mechanic of the Beaverboard and Fibre Company. Nominations for the committee were then received and before the meeting broke up a full and complete organization was effected.

C. W. Illiff, of Messrs. John Dickinson & Co., Limited, paper manfacturers of Watford, England, was at the Queen's Hotel, Toronto, for some time recently displaying samples of the many paper lines manufactured by his firm.

H. F. Gurney, chief assistant to F. W. Field, H. M. Trade Commissioner in Toronto, has left on a trip to England where he will spend Christmas, returning to Toronto at the end of March.

Mr. C. N. Gain was in Montreal last week, introducing Mr. S. E. Strongitharm who will represent the Don Valley Paper Co. of Toronto, makers of cover paper, posters and colored specialties. Mr. Gain took up his work at the Garden City Paper Mills at St. Catharines this week.

T. L. Crossley, of the Institute of Industrial and Domestic Arts, has returned from the head of the lakes and is now continuing his work in Massachusetts. During his visit to the West, 25 men in the employ of Fort William Paper Co., Port Arthur, Division of Provincial Pulp and Paper Mills, and Fort Frances Pulp and Paper Co. enrolled in the Institute's Pulp and Paper course. This makes an enrollment to date of 460.

Edmond Piche represented the Pulp and Paper Magazine at the Colonization Congress held at Quebec last week under the auspices of the Department of Lands and Forests.

A visitor in Montreal last week was Thomas Nesbit of Price Bros. and Co. Mr. Nesbit is sailing for England to spend Christmas with his family and will attend to the preliminary arrangements for the extensive exhibit of the Canadian Pulp and Paper Industry at the British Empire Exhibition.

There are just two corners left in the Pulp and Paper Section of the Canadian Building at the British Empire Exhibition where any late comers can be squeezed in. The secretary of the Canadian Pulp and Paper Association has sent out the "eleventh hour" invitations, and replies must be returned at once, or accommodation will not be possible.

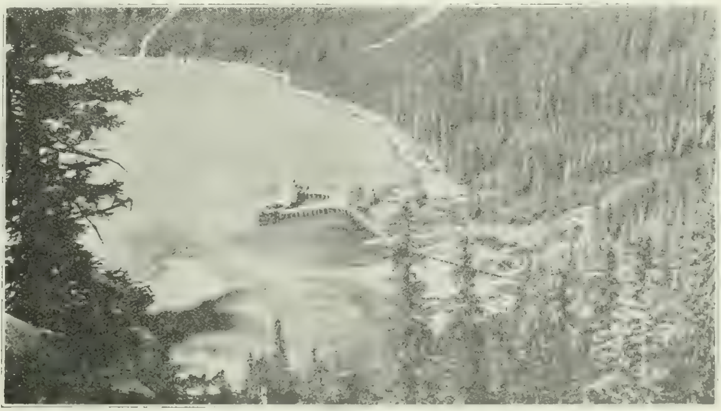
ALASKA MILL WILL MAKE PAPER

C. J. Keenan of San Francisco, secretary of the Alaska Pulp and Paper Company, and G. H. Kirsch, engineer for the company, accompanied by W. P. Lass, manager of the plant at Speel River, were in Juneau recently, says the "Alaska Daily Empire," after making arrangements for the construction of the necessary buildings to house the new equipment for the extension of their pulp mill to make paper and paper products.

A building 40 feet wide by 200 feet long will be required to house the paper machine, at one end of which will be a finishing room containing the customary machinery consisting of winders, slitters and cutters for producing the various finished paper products that the company proposes to manufacture, Mr. Keenan said.

It has been found necessary to build a new cut-up room for more efficiency preparing the wood for the grinders to take care of the increased production. Mr. Kirsch is deeply impressed with the very favorable advantages at Speel River for the development of a large pulp and paper industry made possible by the enormous amount of cheap power so favorably situated to deep water and shipping facilities.

They will hurry forward the early shipment of the machinery and will then return to superintend its erection. It is hoped that the coming spring will see the plant in full operation, Mr. Keenan said.



The Most Northern
Pulp Mill in America

1923). Comparative figures are given showing the cost of drying a pound of paper with electricity by means of steam generated in an electric boiler as compared with drying by direct radiation, and it is concluded that the latter method is at least 33% cheaper.-A.P.-C.

G12; K-12 Removing Water From Fibrous Liquids by Pressing Rollers. A. B. KARLSTAD MEKANISKA VERKSTAD. Swed. pat. 52,787, Sept. 27, 1922. Blast, preferably hot, is applied to the mass between the rollers at the places of highest pressure. C.J.W.

K-12 R-12 Report Discussion and Cost Figures on Efficiency of Electric Paper Drying Machine. JOHN E. ALEXANDER. **Paper Trade J.** 77, No. 12, 43-46 (Sept. 20, 1923). Discussion and comparison of steam and electric drying based on actual operating conditions at the mills of Nekoosa Edwards Paper Co. and on hundreds of tests carried out with an experimental machine equipped with electric driers. The figures show 75.5% thermal efficiency for the steam driers in the mill (not considering the heat required to heat the air in the machine room) and efficiencies of 90 to 98% (average about 92%) for the electric driers. The cost of drying 1 ton of paper was calculated to be $3.30 to $13.20 for prices of $0.0025 to $0.010 per kw. hr., and $3.00 to $3.90 for prices of $0.50 to $0.65 per 1,000 lb. of steam.-A.P.-C.

K-12 Paper Makers' Felt. E. N. HUYCK assignor to F. C. HUYCK & SONS. U. S. pat. 1,458,342, June 12, 1923. Endless paper makers' felts are marked with a guide line after fulling of felting; a dye such as indigo, logwood, or coal tar dyes, which will have practically no other effect on the felt except to color it, is used.-A.P.-C.

K-12 Method of and Apparatus for Drying or Otherwise Treating Paper in a Vacuum. OGDEN MINTON. Eng. pat. 193,298, March 14, 1922. While passing into or out of the vacuum chamber the paper is sandwiched between one or two carrier belts and a pair of rollers, and an airtight joint maintained by means of a liquid which is allowed to run into the V-shaped space between the rollers. The liquid that is drawn in by the vacuum or by adherence to the belts is pumped out again for re-use. On account of the protection afforded by the carrier belts a liquid that would be absorbed, e.g., water, can be used, but in some cases it is better to use a non-wetting liquid such as mercury. Within the vacuum chamber the carrier belts are diverted from the paper, which may pass over rollers heated internally.-A.P.-C.

K-12 Drying Paper in a Vacuum. OGDEN MINTON. Eng. pat. 192,949, Mar. 8, 1922. A continuous web of paper is passed into and out of a vacuum chamber of the type described in Eng. pat. 176,614 through passages which are sealed by fountains of liquid propelled in a vertical direction with sufficient force to overcome atmospheric pressure. The passages may have the form of Venturi nozzles with the narrow end opening towards the vacuum chamber and fed by rotary pumps. Each fountain is provided with a catch basin outside the chamber, with means for collecting the liquid and returning it to the pump. If the liquid is of such a nature as to wet the web, the latter may be protected by the interposition of waterproof guide belts between the web and the liquid seal, these belts being endless and passing through the chamber. Inside the chamber the web of paper is carried over drying cylinders each of which is furnished with a separate drying felt. -A.P.-C.

K-12 Theory and Calculation in the Cylinder Drying of Paper. HERMANN MALLICKH. **Papierfabr.** 21, 337-343 (July 22, 1923); 354-357 (July 29, 1923); 365-369 (Aug. 5, 1923). A mathematical treatment, with diagrams, of the cylinder drying of paper and felts. Formulas are given for single and multiple cylinder drying.-J.L.P.

K-12 Electrically Heated Drying Rolls. E. ZEULMANN. **Papierfabr.** (Fest. u. Ausland Heft) 21, 93-103 (June 9, 1923). The advantages in favor of electrically heated drying cylinders are: the source of the heat can be brought as near as possible to the material to be heated, thermostatic control of the most favorable temperature is possible, and an efficient distribution of the heat. The article describes several drying devices.-J.L.P.

K-12 Drying of Paper Board by the Schedule System ERNST BLAU. **Wochbl. Papierfabr.** 54, 2731-2735 (Oct. 19, 1923). A comprehensive article on drying by the Schilde chamber system.-J.L.P.

K-12 Process for Drying Paper. FEDERICO MARIO VACCARO. Ger. pats. 389,550 and 380,551. **Papierfabr.** 21, 423-424 (Sept. 16, 1923). The moist sheet of paper is passed through a chamber heated by electricity.-J.L.P.

K-12 Heating Losses in the Paper Machine Room. E. P. GLEASON. **Paper Mill** 47, No. 45, 18, 40 (Nov. 10, 1923); **Paper Ind.** 5, 1259, 1261 (Nov. 1923); **Paper Trade J.** 77, No. 20, 55 (Nov. 15, 1923). An outline of the possible and frequent losses in piping and driers and of air heat losses, comparing the open, hooded, and and enclosed types of machine rooms. Figures are given showing the advantages of hooded over open, and of enclosed over hooded machine rooms, and also showing the savings effected by the Briner economizer for recovery of heat from the hot moist air from the machine in each of the three types of rooms.A.P.-C.

K-12 Paper Drying. C. C. ORCUTT. Eng. pat. 202,392. The paper to be dried is carried over an arched belt arranged above the heater. The belt is of fabric which is pervious to air from all directions. It travels with the web. The heater is open at the top, but the supporting run of the belt, which is of net-like construction, breaks up the heat and also forms cells for the temporary entrapping of air, which prevents scorching.-A.P.-C.

K-12 Paper Drier. AMERICAN COATED PAPER CO. Eng. pat. 202,393, Aug. 23, 1923. In this drier the heat is brought into both sides of the paper at once. The vapor mean air is drawn from the drier and reconducted to the original heater.-A.P.-C.

M-0 Industrial Drying. How the Apparatus Works. LUCIEN BUCK. **Paper Trade J.** 77, No. 19, 39-44 (Nov. 8, 1923). A general discussion of the principles of air-drying.-A.P.-C.

K-12 Moisture Indicator. G. S. WITHAM. Eng. pat. 192,401. In order to determine and record the humidity of paper at any given point between the wet end of the forming machine and the calender rolls, wet and dry bulb mechanisms are placed against the web. These testing and recording devices can be moved continuously over the surface of the web to test it at numerous points so as to obtain a mean estimate of the moisture content. In connection with the testers devices may be provided for regulating the temperature in accordance with the records obtained.-A.P.-C.

K-12 Construction to the Study of Paper Drying. R. ISNARD. **Paper Ind.**, 5, 1233-1237 (Nov. 1923). See **Pulp & Paper** 21, 755, July 26, 1923; **Paper Trade J.** 77, No. 6, 55 (Aug. 9, 1923).-A.P.-C.

K-12 Manufacture of Pulp Under Pressure With Indirect Heating. OSKAR S. WALLIN. Ger. pat. 380,-947. **Papierfabr.** 21, 450-451 (Oct. 7, 1923). Steam is passed through coils, the number of which depends upon the temperature.-J.L.P.

MISCELLANEOUS

R-6. Report of the Committee on Waste. R. B. Wolf and G. D. Bearce. Paper Trade J. 76 No. 15, 141-143 (Apr. 12, 1923); Paper Ind. 5, 123-125 (Apr. 1923); Paper Mill 47, No. 16, 12, 14, 42 (Apr. 21, 1923). — The report gives an outline of work carried out by the committee on white water losses and their reduction, utilization of bark and wood refuse, and reduction of broke losses, each of which is dealt with at length in separate supplementary reports. A large amount of general information has been collected upon other phases of waste that are more or less prevalent in the industry, and an outline is given of the principal items which should receive consideration in the effort to eliminate or materially reduce waste in the manufacture of pulp and paper.—A. P.-C.

R-12 Technical Control in Relation to Costs. ELBERT G. MILHAM, Bryant Paper Co. **Paper Mill** 47, No. 11, 14, 16 (Mar. 17, 1923). — A discussion of the necessity for the cost man to obtain the cooperation of the technical man in order to get reliable figures for consumptions of raw materials in various departments.-A.P.-C.

MECHANICAL PULP

D-4 Pulp from Waste Wood. World's Paper Trade Rev. 79, 2083 (June 15, 1923). Sawdust, chips, etc., are put through a pulper and then through a series of three grinders, which are each provided with an upper fixed plate carrying straight radial ribs, which act in conjunction with the angular ribs of the rotating plates. The ribs are formed of metallic strips embedded in cement.-A.P.-C.

D-0 Recent Developments in the American Mechanical Wood Pulp Industry. A. KLEIN. **Papierfabr.** 21, 351-354 (July 29, 1923). A review based on U.S. Dept. of Agriculture bulletins and **Vol. III of The Manufacture of Pulp and Paper.**-J.L.P.

A CATALOGUE OF CHEMICALS

The Kalbfleisch Corporation, 200 Fifth Ave., New York, has issued a catalogue which gives a brief description of the great variety of chemicals which this Company deals in together with a statement of the industries in which each is used and the form in which it is shipped. This catalogue is really a very handy little book and will be sent on request to anyone interested.

Work, then, is the master word by which alone can native capacity reach its fullest fruition; without it, genius itself remains fruitless; with it, mediocrity often-times rises to greatness.—A. B. Farquhar.

"Trim your lamp so that it will give more light and less smoke, and carry it in front so that your shadow will fall behind you. — Henry Van Dyke.

EXPERIMENTS IN USE OF GLUE IN COATED PAPER

In view of the casein situation, coated paper makers will be interested in the following information received from Washington by the American Paper & Pulp Association.

"The Bureau of Standards is carrying out some experiments dealing with the use of glue in coating paper. During the past month nine runs have been made on the experimental coating machine, using two makes of bone glue for eight of the runs and a French casein glue for one. The clay used for all runs was Lee Moor, a good grade of English coating clay. The results indicate that the water resistance of glue-bound coating containing chrome alum compares favorably with that of casein-bound paper containing no formaldehyde.

"It is believed that the degree of water proofness will prove sufficient for most of the papers used for halftone printing. Difficulties have been experienced in obtaining a uniform coating, because of variation of the fluidity of the coating mixture and mechanical defects in the machine, so that additional work will be necessary before paper suitable for printing tests can be produced."

THE SUPERIORITY OF BRITISH CHINA CLAY

Foreign Deposits Reviewed

Dependent as the rest of the world has been upon the unlimited supplies of English china clays from Cornwall, it is, we suppose, only natural that other countries should seek to find, within their own borders, clays approximating in quality and chemical constituents to those they have been in the habit of importing. With rare exceptions foreign exploiters have failed to find anywhere else in the world any kaolins to equal the quality of the best English china clays, but they have succeeded in developing some clay deposits that are at least equal to the common china clays of the West of England.

In no countries are the efforts to find substitutes for our English clays so determined as in America and Canada. There is a lesson in this activity for English china clay producers, and it is for them to get busy to keep their "end up" across the water, where the maintenance of markets is of vital concern to the industry.

This can only be done, as has been frequently pointed out, by means of propaganda at least equal in energy and originality to that being undertaken by our friends across the water.

It is a matter of common knowledge that for some time past Americans users of this invaluable product have lately combined with a view of discovering other sources of supply. Up to the present it is a fact that only a relatively few deposits of good china clay of any commercial value have been found in the U.S.A.

"I am 25 cents. I'm too small to buy a quart of oil; I'm too small to buy one-half pound of candy; I'm too small to buy a ticket to a good movie show; I'm even too small to buy a box of undetectable rouge; but most people think I'm 'some money' when I come to church."

NEW BOOKS FROM WILEY & SONS

AMERICAN LUMBER INDUSTRY. xiv+279 pages. 6 by 9. 35 figures, and a Map showing the progress of the lumber industry. Cloth, $3.00 net, by Nelson Courtlandt Brown, B.A., M.F., Professor of Forest Utilization, The New York State College of Forestry, Syracuse University; formerly United States Trade Commissioner to Europe for the National Lumber Manufacturers' Association and the United States Department of Commerce.

A textbook for courses in forest schools; a practical everyday aid for those engaged in the lumber industry, and a reliable source of reference for the general public interested in national phases of this industry — its economics, statistics and merchandising methods, and the part they play in our national welfare. The entire field is completely and comprehensively covered from the practical working side, including manufacturing, wholesaling, exporting, and technical phases of the subject.

CONTINUOUS CURRENT CIRCUITS AND MACHINERY. viii+467 pages. 6 by 9. 351 figures. Cloth, $4.00 net, by John H. Morecroft, Professor of Electrical Engineering, and Frederick W. Hehre, Assistant Professor of Electrical Engineering, both of Columbia University.

More than a normal amount of space has been devoted to the consideration of changing magnetic fields and currents. Circuits, both electric and magnetic, have been treated in sufficient detail for the solution of all ordinary problems, and oscillograms have been used to an extent which is more than usual for a book of this character, because of the fact that the average student grasps the significance of an oscillogram more quickly and easily than he does that of a formula. Armature reaction and commutation, and the questions of choice of machine types for various services, voltage regulation, effect of temperature and ventilation upon capacity, batteries, automobile equipment, and care and operation of electrical machinery have also been dealt with.

DIFFERENTIAL EQUATIONS IN APPLIED CHEMISTRY, vi + 110 pages. 5 by 7¼. 15 figures. Cloth, $1.50 net, by Frank Lauren Hitchcock, Ph. D., Associate Professor of Mathematics, and Clark Shove Robinson, S. M., Assistant Professor of Chemical Engineering. Both of Massachusetts Institute of Technology.

Contents. Introduction. Why chemists require mathematics. Calculus as a tool. The scope of this book. The fundamental concept of Calculus. Integrating the differential equation. Numerical calculations. Summary. **Processes of the first order.** Definition of a first order process. The Geometrical Progression property. The semi-logarithmic property, **Processes of the second order.** Definition of a second order process. Finding the best line through a set of points. **Simultaneous Processes.** Side by side reactions. Opposing processes. Consecutive processes. Processes of mixed type. **Equations of Flow.** Continuous and intermittent processes. Illustrations of the general method. The problem of intermittent extraction. **The Graphical Evaluation of Integral Expressions.** Reasons for graphic evaluation. Miscellaneous Problems.

HYDRO-ELECTRIC POWER STATIONS, viii + 830 pages. 6 by 9. 436 figures. Cloth, $7.50 net, by David B. Rushmore, Consulting Engineer, General Electric Company, and Eric A. Lof, Engineering Department, American Cyanimid Company.

Contents — General introduction. Hydrology. Dams and Headworks. Water Conductors and Accessories. Storage Reservoirs. Power-House Design. Hydraulic Equipment. Electrical Equipment. Economic Aspects. Organization and Operation. Appendix: Principal Data on Systems above 66,000 Volts. Federal Water-power Act. Turbine Testing Code. Index.

TECHNICAL WRITING. Second Edition. Re-written and Enlarged. ix + 337 pages. 5 by 7¼. Cloth, $2.00 net, by T. A. Rickard — Associate of the Royal School of Mines; Contributing Editor of the Engineering and Mining Journal-Press, etc.

This book emphasizes the great value of a thorough grounding in English on the part of every Engineering student. The first edition having aroused sufficient interest in the important matter of literary expression, the text-matter has been materially revised, and is now offered as a re-written and greatly enlarged book. The first two chapters and the last two have undergone little change, but the others have been re-written. A discussion of the subjunctive of 'shall and will' has been added; and the chapter entitled 'the wrong word' is new, as is also that on punctuation.

Any of these books will be sent on receipt of price, plus 25 cents for exchange of checks and postage, by the Pulp and Paper Magazine, Book Department, Gardenvale, Que.

CONVERSION OF CLAYS TO ALUMINUM SULPHATE

In connection with the development of a simple cheap process of preparing pure solutions of aluminum sulphate, work has been undertaken by the Department of the Interior at the Pacific Experiment Station of the Bureau of Mines on sulphating clays by various methods. Sulphate roasting, using gases containing varying amounts of sulphur dioxide to sulphate the aluminum silicate of the clays proved impracticable, but favorable results were obtained by treating the clays with sulphuric acid. A wide series of aluminum silicate products was treated at various temperatures with differing strengths of acid. In general, nearly all the silicates were decomposed with fair efficiency at temperatures up to 200° C. and with acids containing 50 per cent to 70 per cent sulphuric acid. The easiest silicate to decompose was bentonite, but many of the kaolins were quite easily attacked. Feldspars are much more resistant. These experiments are being conducted by G. S. Tilley, assistant physical chemist.

ARTIFICIAL SILK PLANT FOR CANADA

The Canadian Manufacturers' Association has received word that the managing director of one of the largest manufacturers of artificial silk in the United Kingdom is sailing from Liverpool in order to select a site and arrange for the erection of a Canadian plant. The establishment of this industry is due to the changes introduced in the last budget with respect to the duties on artificial silk and manufactures thereof.

The Markets

CANADIAN TRADE CONDITIONS

Although there have been several reductions in paper lines during the past few days general conditions in the trade remain unchanged with only a moderate amount of business passing. In neither the manufacturing or the distributing end of the industry are any large stocks being turned over although most mills have sufficient orders on hand to keep the machines running on current orders. One leading firm of book paper manufacturers stated that their mills had not more than about ten days' orders booked ahead which is a rather unusual thing when compared with the more prosperous days when mills frequently reported contracts several months in advance. By many the present lull in business is considered more or less seasonal as marking the approach of the stock-taking period when the tendency is to reduce inventories. This policy is evidently being followed by manufacturers, jobbers and printers and it is not anticipated that there will be free buying movement until after the first of the year following stock-taking. In the meantime most paper firms report business as rather spotty with some slight improvement in the volume of small orders, although it cannot be said that the total of pre-Christmas trade has been up to expectations.

SOME REDUCTIONS.—Largely due to foreign competition price reductions in several lines of paper were put into effect early in December. Paper merchants have reduced the price of wrapping papers by three quarters of a cent per pound. Rag brown now sells at $4.75 per car lot, $5.75 for less than car lots, $6.00 for ton lots and $6.50 for small lots. Other lines are as follows: Clover, $5.25, $6.25, $6.50 and $7; White wrapping, $5.25, $6.25, $6.50, $7; Beaver Manilla, $5.50, $6.50, $6.75, $7.75; No. 1 Manilla, Fibre and Samson B., $6.50, $7.75, $8.00 and $8.50; Invincible Manilla, $6.60, $7.85; $8.10, $8.60; No 1 kraft, M. F., $7.75, $8.50, $8.75 and $9.25.

Kraft pulp has been reduced $10 a ton and is now selling at $65.00 f.o.b. mill in place of the old price of $75.00.

On coated paper the jobbers have reduced the price on one to five ton lots by one and a quarter cents a pound on the long price list, which means one cent a pound net.

PULP.—Both groundwood and chemical pulps continue to show a weakening tendency and very few consuming firms are buying in quantity. There is a disposition on the part of most firms to hold off buying for still lower prices or until they can see some evidences of just what the pulp market is going to do. The desire for light stocks at inventory taking is also keeping many consumers out of the market and the curtailment in buying appears to be pretty general. Groundwood is selling at $42.00; bleached sulphite at $80.00 and up; unbleached sulphite at $60.00 to $65.00, and newsgrade at $60.00.

NEW YORK MARKETS

New York, December 8. (Special Correspondence.) Some rather sharp changes in prices of certain kinds of paper have been noted in the New York market this week. The trend in these grades has been downward. Manufacturers, in their anxiety to secure orders, have cut quotations, while easiness in certain descriptions of raw material has contributed to the softening of paper prices

The market as a whole continues to be characterized by fair activity. It is noticeable, however, that the same one-sided condition that has prevailed for some time still exists. Consumers of print paper, bag paper and certain other kinds of paper are buying in heavy volume; activity in such branches of the industry consequently is of abnormally broad scope, whereas there is a very restricted demand for other kinds of paper. This results in some mills being rushed to fill the call for their product while others are badly in want of business and are going to extremes in an effort to stimulate buying and to secure orders.

Domestic wrapping paper prices have declined rather sharply. About the highest price prevailing on No. 1 domestic kraft wrapping at the moment is 6.25 cents per pound f.o.b. mills, and most manufacturers are accepting orders at less than this figure; in fact, there have been reports of sales of domestic kraft paper down to 5.75 cents at mills. One mill is reported quoting No. 2 domestic kraft wrapping at 5.25 cents f.o.b. mill, and it is said that the No. 2 grade has sold below this level in exceptional cases. The easing of kraft paper values has been due in good part to competition of foreign paper. For some months past large quantities of kraft wrapping have been coming into the United States from German and Scandinavian sources, and importers have been able to market this paper at prices under those ruling on domestic paper of the same kind. Foreign No. 1 kraft wrapping of the best quality is freely offered in New York at present at 6.25 cents per pound, which means that the highest grade of imported kraft is available to consumers at this centre at a saving of about the freight from domestic producing mills to New York.

An easing tendency has developed in book papers. No actual change in quotations has been made but it is no secret that mills are shading asked prices when it is necessary to obtain tonnage orders. Book paper manufacturers are in a position where they have enough business to keep them fairly well engaged, but not running full. Most of them are anxious to operate at capacity, as would be expected since profit today is to realized principally through maximum production. Any orders offered book mills within close proximity to the prices recognized as market levels consequently are quickly accepted. The average price named on machine finished book paper of the usual run of quality is 6.75 cents per pound f.o.b. New York, but some sales at a quarter of a cent per pound less have been recorded, and in exceptional instances manufacturers have cut under this level. There is a consistent movement of book papers but publishers are buying in a reserved manner, mainly to cover direct requirements, and there is not sufficient business to go around and keep all the mills working at anything like capacity.

Newsprint continues in a strong market position. Consumption at the moment is probably at the peak for the year, which is saying a good deal since some new records of print paper consumption have been established in 1923. Publishers are printing papers of record-breaking size in order to carry the pre-holiday advertisements of department stores and other merchants; for example, one of the New York afternoon newspapers yesterday published an issue of 70 pages. December gives promise of topping off a remarkable year for the newsprint industry—remarkable in the sense that all previous records of print paper consumption in the States have been exceeded by a good margin. It will be interesting to note total figures of consumption for the year when they are compiled, and prospects are that consumption will run into even heavier tonnage in 1924 since there is every indication the present volume of advertising in the daily press will continue in the new year and that publishers will have increased facilities enabling them to print issues of a greater number of pages than this year.

Box boards are fairly active. The report of the Box Board Research Service shows that during the week ended November 24 twenty-three board mills in the West made 8,024 tons of board, equal to 74 per cent of their capacity, booked new business totaling 7,828 tons, equal to 72 per cent of their output, and had orders on hand for 21,047 tons, equivalent to 11 days' production, while 14 mills in the East made 2,790 tons of board during the week, equal to 70 per cent of their capacity, received new business totaling 2,275 tons, equal to 60 per cent of their output, and had unfilled orders on hand amounting to 3,086 tons, equivalent to four days' run. Quotations on board range around $45 a ton f.o.b. New York for plain chip, and $50 for news board.

Fine papers are enjoying moderate activity and are holding in price. Individual mills seem to be securing the bulk of orders rather than the large groups of writing paper plants which operate under a single management. Bag papers are in active demand and manufacturers are behind in deliveries. Specialties are wanted in at least normal quantities and quotations are maintained.

GROUND WOOD—A steady tone prevails in the mechanical pulp market. Apparently prices have worked down to levels which both consumers and producers regard as reasonable and there is little hesitancy shown by users about purchasing pulp if they are in need of supplies. This makes for a fair demand, and the fact that consumption is heavy and that most producers haven't much ground wood to dispose of in the open market is another bullish factor. Domestic ground wood is selling at around $40 per ton f.o.b. pulp mills, prices depending on the air dry test and the freight to consuming points, while imported ground wood from Scandinavia is bringing $37 and $38 per ton ex dock New York. The movement of mechanical pulp from Canada to U. S. mills keeps up at a good rate, and this pulp is fetching about $40 per ton at producing plants.

CHEMICAL PULP—Buying interest in chemical pulp is increasing without a doubt but there is an easy tone to prices and the general market situation is far from pleasing to producers and importers. Consumers have become so accustomed in recent weeks to getting pulp at concessions that they are still on the lookout for "cheap" supplies, and most sales are made at prices which are below recognized market levels and also below the cost of replacement at primary sources in Europe. At the same time business is on the rise, and some tonnage sales of No. 1 imported unbleached sulphite at around 2.70 cents per pound ex dock New York have been reported, while foreign bleached sulphite of No. 1 grade is selling at 4 to 4.25 cents on the dock here, of No. 2 grade at 3.30 to 3.75 cents, and No. 1 imported kraft pulp at about 2.65 c. ex dock New York. Importers assert they cannot buy pulp abroad at these rates, and quotations on forward shipments generally range higher. Domestic pulps are moving into routine channels at comparatively weak prices, manufacturers being anxious for business.

RAGS.—Roofing stock has continued to strengthen this week and prices of other papermaking rags tend to harden. Demand for both foreign and domestic roofing rags has been fairly active, and with importers and dealers possessed of high price ideas, quotations have been advanced to levels representing a considerable advance from the bottom prices prevailing only a short while ago. No. 1 domestic roofing stock has sold at 1.60 and 1.70 cents per pound f.o.b. New York, and No. 2 packing at 1.40 cents New York, while foreign dark cottons are held by importers at 1.45 to 1.50 cents ex dock at this port. New cuttings of the most kinds exhibit a rising trend, and prices are gradually stiffening.

PAPER STOCK—Prices of old paper have risen to higher levels this week. Despite reports to the effect that consumers are buying in a very limited manner and that they are bidding low prices, the market trend is unmistakably upward, and dealers assert there is much difficulty encountered in locating usual supplies at packing sources. Folded newspapers are selling at 85 to 90 cents a hundred pounds f.o.b. New York, and No. 1 mixed paper at 60 to 65 cents, and probably slightly higher prices than these have been granted by mills for special quality packing. Old magazines have stiffened in value to a pronounced degree. New York dealers now quote at least 1.65 cents a pound f.o.b. this city for heavy flat magazines, and 1.35 cents for crumped stock, while ledger is worth 2 cents a pound New York and ledger books 2.15 cents. Old No. 1 kraft paper is bringing around 2.15 cents f.o.b. New York, and is in good demand, while another strong item is white blank news, which dealers quote at 2.25 cents New York in a majority of cases. Shavings hold at around 3.90 cents a pound New York for No. 1 hard white, and between 3 and 3.25 cents for No. 1 soft white shavings.

OLD ROPE AND BAGGING.—There is a brisk call for old manila rope and prices of this papermaking material incline firmly upward though no further advances have been noted this week. Dealers quote 7 to 7.25 cents a pound for No. 1 domestic manila rope f.o.b. New York, and foreign manila rope is held at 6.50 to 6.75 cents ex dock at this port. Apparently there is not much rope in the market and sellers seem to be obtaining the prices desired since bag paper mills are busy and are in need of rope. Bagging is in routine demand only and rather easy in price. No. 1 scrap burlap is freely available at 1.25 cents per pound New York, and roofing bagging at 90 cents a hundred pounds.

Industrial Items

COMBINED BAROMETER AND VACUUM RECORDER

Steam turbine plants will be interested in new Uehling bulletin No. 150. It describes the combined barometer and vacuum recorder which instrument is, in effect, an automatic log of steam turbine and condenser performance, because it records the absolute back pressure of the turbine continuously, thus showing up instantly any air leakage or other cause of reduced efficiency. This is accomplished by tracing the records of both barometric and vacuum changes on the same chart. The absolute back pressure is read directly from the vacuum recorder by using the barometric record as the base line. When the vacuum fluctuations parallel the barometric fluctuations on the chart, conditions are normal but a divergence of the two records warns the operator that immediate attention is required. The working range of the chart is expanded and hence remarkably legible. The instrument operates on the mercury column principle, consequently stays in calibration permanently because there are no moving parts to get out of adjustment. Copies of this bulletin may be obtained from Uehling Instrument Company, 473 Getty Avenue, Paterson, N. J.

The Under-Feed Stoker Co., of Canada, Limited, announce the following change in their personnel:

Mr. W. T. Brickenden, B.A.Sc., (Honors) A.S.M.E., E.I.C., has been appointed Chief Engineer for the Company vice Mr. D. F. Grahame, who has been transferred to the Head Office of the Sanford Riley Stoker Company at Worcester, Mass., U.S.A.

Mr. Brickenden — a graduate of Toronto University, Faculty of Applied Science in Mechanical Engineering — has been with the Company as Assistant to Chief Engineer since 1920 and has been engaged in research and installation work during the ensuing period.

LINK-BELT COMPANY ISSUES NEW BOOK FOR PULP, PAPER AND SAW MILLS

Of interest to every saw mill or pulp and paper mill man is the new book on chain and chain application, recently issued by the Link-Belt Company.

128 pages in extent, it illustrates and describes the various types and classes of chain used in this industry. The liberal use of photographic reproductions fully illustrates the application of these chains. Complete data regarding tensile strength, size, weight and prices is given in tabulated form.

The new book also covers, briefly, such equipment as the electric hoist, locomotive and crawler cranes, belt conveyors, coal handling equipment, log stackers, sprockets, clutches, etc. Each subject is illustrated and described.

Copies of this new book, known to the Link-Belt Company as No. 660, are obtainable at any of their plants in Indianapolis, Chicago or Philadelphia.

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VOL. XXI. Gardenvale, Que., December 20th, 1923 No. 51

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A Merry Christmas

TO ALL OUR FRIENDS

It would please us very much to be able to send a personal, individual Christmas card to each reader of the Pulp and Paper Magazine, and all our other friends.

That, of course, is out of the question, but the hearty wishes of the Publishers and Staff for a Very Merry Christmas and a Prosperous and Happy New Year go out to all with whom we have had such pleasant relations for the past year and longer.

HOW TO KEEP HOWE

The news that an American university has its eyes on Dr. C. D. Howe, dean of the Faculty of Forestry at Toronto University, will come as a shock to all Canadians who believe in the protection and conservation of the forest. There are many in Canada who appreciate the value of Dr. Howe's service to the whole Dominion and realize the need for keeping able men of his type in the public service. To have an institution poke another thousand dollars or so at Dr. Howe and ask him to come across (the line) is really pointing a gun at the rest of us and saying, "Hand over an expert forester, a man with a broad vision and great foresight, a man who knows the principles and practices of forestry. You don't appreciate him. You don't realize your forest problem. We do! You have not listened nor comphehended what he has been telling you, lo! these many years. Let us have him over here. We'll see that he gets support and encouragement.

Now, we don't play poker, but we have seen the game, and with only a speaking acquaintance, know that a player with a royal flush could appropriately be termed a fool if he let the pot go to his opponent who was known to have only a couple of pairs. That is, approximately, the relative situation with regard to the forests in eastern Canada and the United States. In this connection, the following letter will be of interest.

Montreal, December 15th, 1923.

Sir Edmund Walker,
Chancellor, University of Toronto,
Toronto, Ont.

Dear Sir,

All true Canadians will be greatly disturbed and alarmed to learn by newspaper reports that the University of Michigan is endeavouring to persuade Dr. Clifton D. Howe to leave the University of Toronto and become the head of their Forestry Faculty. Not content with relieving Canada of its raw pulp wood and brawn, American institutions are also appropriating our brains upon which they appear to put a much higher valuation than we do ourselves for the protection of their own forest resources. Dean Howe's departure would be a loss that could not be repaired at any price as there is only one Dean Howe on this continent, and Canada, in the present critical condition of her forests, cannot afford to suffer the irreparable loss that would be entailed by his alienation. Canada is in urgent need of every trained forester and forest insect entomologist obtainable, for without these technically trained men, backed up by enlightened, honest and loyal government, the future outlook for Canada would be beyond hope.

The miserable remuneration that these highly trained technical men in the public service in Canada are receiving is little short of a scandal, especially when millions are being literally thrown away by our Governments in needless extravagances and worse.

What inducement is there for our young men to acquire a college education and devote long years to training when the final result is a wage commensurate only with that paid to unskilled labor?

Dr. Howe must not be permitted to leave Canada. It would be a national calamity.

If Canadians do not soon arouse themselves from their Rip Van Winkle slumber there will shortly be nothing left in this country but stumps, piles of sawdust and politicians.

Yours very truly,
(Signed) Frank J. D. Barnjum.

Now what is to be done about it? Our suggestion is to "ante" up a bit more out of the boodle that is obtained and obtainable from the forest that Dean Howe and other patriots are striving, against discouraging public indifference, to protect and develope. We need to get together on this problem, and at once.

BRITISH EMPIRE EXHIBITION AND STEAMSHIP RATES

Reports current that the steamship companies will offer reduced rates to travellers to the coming British Empire Exhibition were given their quietus the other day by F. J. Norsworthy, joint manager of the White Star Line at Liverpool, who arrived in Montreal on a tour of the principal ada and the United States of the White Star and associated lines.. "I can state definitely that there will be no reduced rates for the exhibition," said Mr. Norsworthy. "All the steamship companies are unanimous in the decision that they cannot see their way clear to grant any concessions in the matter of passenger rates. Traffic has been only fair during the past summer. The disturbed conditions in Europe have been very harmful to steamship traffic and have had a direct effect on passenger carryings. We have received all sorts of inquiries concerning the possibility of reductions for the exhibition, and I am in a position to say positively that there will be no reductions whatsoever."

This announcement will come as a distinct disappointment to large number of people who had naturally been hoping that, with such a magnet as the British Empire Exhibition for next year, the steamship lines would seize the opportunity of helping to make next season a "bumper" one for ocean traffic between Canada and the Old Country. We quite accept the statement that traffic has been only fair during the past summer, and no doubt the disturbed condition in Europe has had a good deal to do with this. But so, too, we suspect has the heavy cost of ocean trips. People, in these days of high costs all around, simply cannot in many cases, afford so expensive a journey, anxious though they may be to go to Europe. We believe that had the steamship lines seen their way clear to make a substantial reduction in rates to travellers to the British Empire Exhibition, such reduction would have acted as an incentive to make the trip to large numbers who may now feel them selves precluded from doing so.

CAPTURING TIME

Benjamin Franklin tells us how he found time to accomplish so many important tasks in a little book written by him, and incorporated in the last issue of his Almanac "Poor Richard" in 1757. This book is popularly known as the "Way to Wealth", and has been translated into many foreign languages. In it, we find Franklin's formula for dealing with time, as follows.

Methinks I hear some one of you say: "Must a man afford himself no leisure?" I will tell you, my friend, what Poor Richard says:

"Employ thy time well if thou meanest to gain leisure, and since thou art not sure of a minute, throw not away an hour. Leisure is time for doing something useful; this leisure the diligent man will obtain, but the lazy man, never."

"Lost time is never found again, and what we call "time enough" always proves too little."

THE ROAD TO DAMASCUS

By REAR-ADMIRAL RONALD A. HOPWOOD

"And it came to pass, that, as I made my journey and was come nigh unto Damascus, about noon. . . . ."— St. Paul.

We saw the light at noonday, bright thro' the battle smoke,
Calm and clear 'mid the tumult we heard His voice that spoke,
In blood was dipped His vesture, Faithful and True His word,
But now—our eyes are blinded—tell us "Who art thou, Lord?"
Grey is the road to Damascus with fallen Empires' dust,
Might of itself corrupted, treasure by moth and rust,
Only there lives unchanging, first fruit of those who died,
Jesus the persecuted, Christ who was crucified.

We saw the light at noonday, and when we seemed to fail,
Pledged we our utmost farthing so that Thy Truth prevail,
But now—our eyes are holden, we cannot see Thy face
Nor hear Thy voice in the clamour of Senate and Market-place.
Old is the road to Damascus, pregnant its memories be:
"Naaman alone the chosen, tho' many were such as he,"
To conquer the pride that hindered a gift no wealth could win,
Then went he down to Jordan, washed and was cleansed therein.

We saw the light at noonday and buried our dead thereby,
Nameless, a King we laid him where Kings and Princes lie,
Royal, because a Servant who gave the best he knew,
Plead we again in his Silence, "What wilt Thou have us do?"
Strait is the road to Damascus, but wide for such as dare
Transfigure an Empire's gospel, and preach of Service there,
Fetter and cross for guerdon, would ye receive your sight?
Arise and go to Damascus, and Christ shall give you light.

—St. Martin's Review.

It is gratifying to learn that the Canadian Building at the British Empire Exhibition is further advanced than the buildings for any of the other Dominions. A number of the pulp and paper exhibits are ready for shipment and the others are practically complete.

Pulp and paper men who have contributed to the Dominion Exhibit of Natural Resources will be gratified to learn that the fire which occurred in the Exhibition Commission's Headquarters Building at Ottawa did not damage their products, and that this material is now on its way to London. Mr. Stokes, who has charge of the Forestry and Forest Products display, for the Natural Resources part of the Canadian Building, is already in London and at work on the arrangement of the exhibit.

Colonization Congress at Quebec

(Special Report to Pulp and Paper Magazine)

By EDMOND PICHÉ

The second Colonization Congress to be held by the Provincial Government since Confederation was opened on December 4th at the Parliament Buildings under the presidency of Hon. J. E. Perrault, Minister of Colonization, Mines and Fisheries, and closed in the late afternoon of December 6th.

In opening this Congress, Hon. Perrault called on His Honor the Lieutenant-Governor, Hon. L. P. Brodeur, to address the large gathering of settlers, limit holders, colonization missioners, forestry and colonization engineers. The objects of the Congress and the results expected to be attained were referred to by His Lordship, the Cabinet Ministers Messrs. Perrault, Mercier, Taschereau, and Mgr. Arseneault who represented His Eminence Cardinal Bégin.

The following questions were to be studied by the Congress:

I.—Division of the Province into regions appropriated to colonization and to forest industry respectively.

II.—(a) Study of the existing legislation concerning colonization; (b) Classification of lands suitable and unsuitable for cultivation; (c) Cutting of wood on lots for settlers, also cutting of burnt wood and green wood; (d) The burning of slash, permits, and forest fires; (e) Conditions of settlement; (f) Recruiting of settlers.

III.—Different means of assisting colonization and settlers.

IV.—(a) Desertion of the soil; (b) Creation of industrial centers; (c) Embargo on the timber of the settlers and farmers.

V.—Immigration and Repatriation.

VI.—All other questions which may be submitted to the Congress concerning colonization and settlers.

Speeches and Lectures

Premier Taschereau admitted that the present colonization system was not perfect and that was what had prompted the Government to hold these meetings. To keep people at home, it was necessary to have good land offered for cultivation as well as industrial development in the towns. The prime minister then referred to the fact that $2,500,000 had been spent for colonization this year and that during that time the profit realized on forestry exploitation had only reached $1,900,000. He added that the people were leaving the province because they were discouraged. Speaking of Price Bros., he said that this important pulp and paper firm would soon be producing 900 tons of paper per day which meant employment for more men. At the Grande Decharge, 1,000,000 horse power were being developed and more men would find employment there.

Speaking of immigration, Premier Tachereau was inclined to believe that it was not profitable for this province as the majority of immigrants attracted through this province to be going to cities instead of on the soil. As a result he did not think that the grant given by the Federal Government towards this movement was profitable to Quebec. What he wanted the Federal Government to do was to place grants at the disposal of his Government to encourage repatriation.

Hon. H. Mercier, Minister of Lands and Forests, said that the Congress would have already done much in destroying an old story to the effect that the settlers and the limit holders were enemies and that the Minister of Colonization and the Minister of Lands were always opposing each other. Such is not the case. He stated that there were places both for settlers and limit holders and that both were entitled to protection.

Turning to forest fires which were so disastrous, Hon. H. Mercier said that the time had come when cooperation was necessary from every one. The responsibility of the different classes of people in connection with the destruction of the national domain by fire could not be assigned, but he wanted it known that every one had his own share. With regard to the division of colonization districts and the section more suitable for forestry exploitation, he said that he knew that demands were received sometimes for lots which were of no use at all for cultivation purposes and proved to be discouraging for the settlers.

Hon. J. E. Perrault, Minister of Colonization, made a review of the work accomplished by his department in the last few years to encourage colonization. Figures which showed the constant increase in the grants made for colonization were given. In the last five years, the amounts expended were as follows: 1919-20, $704.00; 1920-21, $1,440,097; 1921-22, $2,004,000; 1922-23, $2,450,000. Up-to-now, with only six months' report available, the amount expended reached $1,643,000. The total of the five years being $8,241,240, or $2,000,000 over the total of the amount expended before in fifty years' time.

Amongst the speakers at the afternoon and evening sittings were Sir William Price; Gustave Piché, Chief Forestry Engineer; Thos. Maher, Hon. John Hall Kelly, Henri Keifer, Forestry Engineer; Rev. abbé Bergeron, Rosaire Valin, Forestry Engineer; Oscar Desgagné, Surveyor; Jos. Grenier, Chief of Sales Branch-Dept. of Colonization; Hon. T. N. Francoeur, Mr. L. A. Richard, Deputy Minister and Hector Authier, M.L.A., Abitibi.

Mr. Gustave C. Piché spoke of the separation of the forestry domain from the agricultural land. He insisted on the necessity of preserving the forest in the heights and along the shores of the rivers so as to keep the flow in water courses regular. In case of doubt as to the agricultural value of land, it was needless to try and colonize such sections. He made the interesting announcement that not more than ten per cent. of the area of the Province of Quebec could be colonized with success. He advised the development of the parishes already existing and to take all possible means to encourage colonization in certain sections of the country like Temiskaming and Abitibi where the land was known to be very suitable.

Sir William Price presented, in French, a very interesting address based on the argument that the prosperity and the progress of the Province of Quebec depended on the prosperity and progress of the settlers and the limit holders. He gave certain figures showing the importance of the contribution of the lumber and paper industries in the development of the Province.

The following figures on the sawn lumber industry in 1920 and the pulp and paper industry in 1921 were given:

Sawn Lumber

Paid-up Capital (Forestry operations) . .	$ 8,556,154
Paid-up capital, (Sawing operations) . .	42,445,220
Total paid-up	$ 51,001,374
Number of men employed, upwards of 20,000—	
Wages and salaries	$ 19,000,000
Material employed	20,400,000
Production	40,000,000

Note that in that year there was a loss in operation.

Pulp and Paper Industry, 1921

Capital invested in the mills	$171,477,753
Number of men employed	13,000
Salaries and wages (in the mills)	16,000,000
Consumption, 1,111,227 cords—Value . .	19,000,000
Pulp and paper produced—Value	93,000,000

Sir William Price stated that while agricultural development was important to the continued progress of the pulp and paper industry, the agriculturists could not, on the other hand, progress without the industry named. He blamed the policy of the past which allowed settlers to take land not suitable for agricultural purposes. He then summarized what he suggested as a program of colonization which would be fair for both the settler and the limit holder. He would classify the land as follows:

1. Land that should remain in forest. This should be adequate to maintain the supply required by the lumber and paper industries now established, and these areas should form unbroken forest reserves.
2. Land required to provide for the estimated development of agriculture during the ten years after the lands now available have been entirely absorbed.
3. Land suitable for agriculture but which will only be required at more distant dates.

In closing his remarks Sir William stated that if this program was followed he was sure the Province of Quebec would attain the destiny that had been assigned to her by Providence.

Mr. Keifer, Forestry Engineer, suggested the possible division of the Province into zones of land suitable for cultivation and zones suitable for the forestry industry. By following the natural division assigned by nature, it was found that the rich land was in the valleys and consequently, those sections were more suitable for agriculture.

Thos. Maher, Forestry Engineer, read quite a lengthy report which lasted some two hours. Part of his lecture was illustrated by pictures supporting his views. He made a special review of the district of Montmagny and of the Petit Saguenay, stating that Lake St. John at present had been sufficiently colonized and that colonization conducted in L'Islet and Montmagny counties had only led the settlers taking lots in that section to be either the prey of the speculators or to lead a life characterized by poverty.

At certain times during his lecture there were protests from settlers on whom part of the responsibility for the destruction of forests by fire was placed by the speaker. In answer to questions put to him regarding what he termed to be speculators and whether they were not the big limit holders, Mr. Maher protested and stated that he termed the speculator as to the man who went around the country trying to get ten, fifty or one hundred lots and then destroy the timber without discernment.

His suggestions were as follows:

1. We believe that the colonization budget must be further increased, and "the settler's credit" organized as soon as possible.

2. All colonization efforts should be directed towards Abitibi and Temiskaming.

3. Outside these two regions of Abitibi and Temiskaming, the Government should turn over for colonization in the nature of lands only just what is needed to complete the parishes in process of development at the present time.

4. Half of the increased colonization budget should serve to repair our great error by an effort to repurchase the lots in speculation, and to subsidize the settler.

5. Let it be admitted in principle that the neighboring forest industry should live because it is absolutely necessary to enable the settler to find the complement necessary to his existence.

6. A bureau should be formed, composed of an expert in forestry matters, an expert in agriculture and an expert in colonization, to definitely classify the Province of Quebec and to delimit what is needed of new lands by the parishes in process of formation, but especially to classify in detail, in an intelligent manner the lands to be colonized in the Abitibi and Temiskaming regions.

7. Let the policy of making the life of a settler more agreeable be adopted.

Hon. Mr. Perrault thought that Mr. Maher was very pessimistic and worried too much over errors of the past while the object of the Congress was to consider suggestions for the future. Rev. abbé Bergeron endorsed Mr. Perrault's remarks, adding that Mr. Maher lead to the belief that very little was left that could be colonized

Hon. John Hall Kelly, M.L.C., who spoke in French, made the most interesting suggestion when he referred to the creation of an independent commission comprising a representative of the settlers, of the limit holders and the Provincial Government. The creation of such a commission would put an end to any abuse he thought

At the evening sitting, Mr. Kelly gave further explanations regarding his projected commission, to which Hon. Mr. Perrault answered that political pressure was not as exaggerated as Hon. Mr. Kelly seemed to think. To this, Hon. Mr. Francoeur added that a commission was generally named when the Government was not able to administer but such was not the case with the department of Colonization.

Papers were presented by Messrs. Rosaire Valin, forestry engineer; Oscar Desgagné, surveyor department of Colonization; Jos. Grenier of the sales branch department of Colonization. Mr. L. A. Richard's suggestion that a law which now provides that after twenty months' notice a limit holder must abandon his limits should be repealed was endorsed by Hon Mr. Perrault

The morning sitting of December 5th was attended by a larger number of people than on the previous day, members of the Federal and Provincial Governments being in evidence and the clergy taking an active part in the debates

Col. Thos. Vien, K.C., M.P.P., suggested a legislation to allow limit holders to cut timber on lots transferred by the Department of Lands and Forests to the Colonization Department as suitable for colonization purposes. His suggestion was favorably received by the members of the Colonization Congress. He also added that the limit holders thus cutting timber on lots transferred to settlers be bound by several regulations regarding the cutting of timber in order not to go beyond the authorized diameter and to follow in full all regulations protecting the forests, so as not to completely destroy the wood left available for them on the settlers' lots.

Rev. abbé Lavoie suggested that some means, which he could not define, be taken to prevent the establishment of too many saw mills which tempted the settler to cut the wood on his land and impoverish him instead of being of benefit to him. He also claimed that they attracted speculators to try and rob the lots.

Mr. Gustave Piché explained that a legislation had been adopted two years ago to prevent the establishment of saw mills where they were not required and also governing the equipment used so as to prevent accidents.

Mr. Elwood Wilson, Chief Engineer of the Laurentide Company, presented an interesting paper on the destruction of forests by fire and also made a number of suggestions.

At noon, the Provincial Government tendered luncheon in honor of the delegates in the Parliamentary Cafe. No speeches were made.

The afternoon sitting started at 2.30 o'clock. The first speaker was **Gustave C. Piché** who dealt with the question of the cut of wood. Things were going much better, he thought, and the misunderstandings that had existed over the cutting of wood would disappear in consequence of the severe instructions received from the Minister of Colonization.

Hon. Mr. Moraud, Minister without portfolio, stated that he had visited the principal colonization centers during the course of the last year and that there was a brilliant future for the Province of Quebec, that future being in colonization. His main speech was on classification of lands.

One of the sore points of the Congress, he said, was that for classification one must not believe that all of the land was fit for cultivation as it was not all of the same color. Classification of the land should be made in a reasonable and sane manner. It was true that there were a few corners in the Province that should not have been given to settlers, but the colonists should be given land that was a little rocky and sandy and good parishes could be made out of them. Turning to forest fires, he said that colonists should not be held alone responsible for them, but blame shuld be put on Indians and careless hunters,

Mr. Avila Bédard's address was on "The Burning of Slash." Out of a total of 1,600 fires, he said, settlers could be blamed but for only 408. He suggested that settlers should not be allowed to burn slash nearer than fifty feet from the forest, and that he should stay on the spot until the fire was completely finished. Besides, he should not be allowed to burn slash between April 1st and September 1st, except with special permission from the Department.

Mr. Eugène Gagné spoke of permits for the burning of slash. Permits were given, he said, by the Fire Protective Association, controlled by wood merchants, under the direction of a manager who engaged fire wardens who in turn gave permits. To Hon. Mr. Perrault's suggestion that fire-wardens be named by the Department, there were cries of "Yes, Yes". It was here stated that the chief cause of forest fires was exploitation just as much by the settlers as by the companies.

He had been told, he said, that 90 per cent of the forest fires were due to the fact of the Government owing a settler $50 to $200 on the wood cut and refusing to give the money to a settler. The speaker then read a resolution from Rimouski recommending that the Department of Colonization should name the fire-wardens and let each parish approve of the Department choice.

Rev. abbés Gobeil, Lalonde and Martin approved of the fire-wardens being named by the Department of Colonization. Messrs. Seaborn and Hector Authier gave valuable advice on the same subject.

At the night sitting, Rev. abbé Martin suggested that the Government should give letters-patent to the colonist who would have resided 18 months on the same lot, holding 30 to 100 acres of cultivated lands, one house of 15 x 20 and a farmhouse 20 x 25 feet.

Mr. T. Mercier, Inspection department, then gave statistics of the work which had been accomplished during year 1922-23 to be followed by Mr. Gagnon of the Rimouski Agriculture Council who spoke on the cutting of wood.

The other speakers were Messrs. Magnan who spoke on advertising of Colonization; abbé Neveu, on rural savings; abbé Jean Bergeron who suggested 13 ways of helping Colonization.

Mr. Hector Authier was in favor of a Government credit being given to help the new colonist. Messrs. abbé Beauchamp and M. Bugeaud were opposed to a Government loan being made to the colonist but favored the rural savings.

At the morning sitting, on the last day of the Congress, the first speaker was **Hon. Mr. Moreau.** He found that in the case of Lake St. John district, which he represented, the increased industrial enterprise reacted to the benefit of the agriculturist. Increased employment in the mills created an increased demand for farm products and instead of diminishing the number of lots taken up by the settlers it tended to increase them. The speaker referred to the works under way at the Grande Décharge, saying that the pulp and paper mills which were already in operation employed a large number of men, but they certainly did not destroy the prosperity of the vicinage.

Abbé Bergeron made it clear that he was not opposed to all industries, but he felt that industries should be prohibited in districts where the settlers would be tempted to choose an easier mode of life.

Mr. Seaborn, Assistant Manager of the Donnacona Pulp and Paper mill, said that a rumor was prevalent that the Government would take over the Fire Prevention Service. He thought that this action was not necessary. He pointed out that the grants given by the Forest Protective Associations reached only $3,000 although the task had increased enormously. Grants should be increased, then the service would be satisfied and the work carried out in the most efficient manner possible.

Hon. Mr. Mercier stated that at the next session of the Provincial Legislature a modification of the present laws governing the protection of forests would be made, while **Hon. Mr. Perrault** stated that he was opposed to a commission for the control of Colonization and that it was not the intention of either the Government or the Department of Colonization to ruin the forestry industry.

These statements were made at the afternoon sitting of the Congress which broke up shortly before six o'clock on December 6th.

Amongst the many suggestions which were made at the closing session of the Congress was one by **Rev. abbé Martin** who suggested that the clearing bounty paid settlers by the Government, which is now $4.00 per acre, up to five acres per year, be increased to $20.00 per acre, up to thirty acres.

Rev. abbé Ouellet and Messrs. Lamond, of the Federal Immigration Department, J. A. Daignaut of Woonsocket, R.I., spoke on Repatriation.

Mr. J. E. Laforce, Immigration Agent in the United States, said that although this year had been the worst experienced as regards repatriation, there had been many hundred families who had returned to Canada, there being 419 families alone for the Province of Quebec.

Rev. abbé Rochette was opposed to Colonization being placed under the direction of a commission, while **Rev. abbé Michaud** urged that Hon. Mr. Perrault should retire from politics and become head of a Commission to look after Colonization.

Mr. Bugeaud, M.P.P., took exception to this last resolution and said that politics were the base of a government. This amendment being voted was sustained by a large majority when Hon. Mr. Caron rose to his feet saying that he had never heard of such a proposition and that it would be a cure that would be worse than the ill.

Rev. abbé Jean's suggestion that aid should be granted for instruction, etc., was adopted while **Rev. abbé Bergeron's** resolution separating the forestry and colonization zones was also adopted.

Mr. J. Ouellette, M.P.P., proposed that the Government take over the protection of the forests on the South Shore due to the inefficiency of the fire-wardens. He warned every one against the creation of a Commission and said that at the coming session there would be a measure to modify the present system

When the last session of the Congress was through, there was still quite a large attendance though many of the delegates had already left by the afternoon trains.

WOOD PRESERVATION SPECIALIST WANTED

A Wood Preservation Specialist for the Forest Products Laboratories, Forestry Branch, Department of the Interior, Montreal, Que., at an initial salary of $2,700 per annum, which will be increased upon recommendation for efficient service at the rate of $120 per annum until a maximum of $3.180 has been reached. There is also opportunity for promotion to higher positions in the Service; all such positions under the Civil Service Act, whenever consistent with the best interests of the Service, being filled by promotion.

Duties.—To perform laboratory tests and research work pertaining to the preservation of wood; to design apparatus and equipment for use in wood preservation tests; to visit timbered lands and commercial plants in search of materials for use in research work; to furnish information relating to the preservation of wood; to prepare reports and handle correspondence; and to perform other related work as required.

Qualifications required.—Education equivalent to graduation in science from a university of recognized standing with specialization in forestry; at least two years of forestry and laboratory experience; knowledge of modern office methods; ability to write for publication; preferably, ability to read, write and speak fluently French. While a definite age limit has not been fixed for this competition, age may be a determining factor when making a selection.

Nature of Examination.—A rating on Education and Experience will be given from the sworn statements, supporting documents, and other evidence submitted by applicants. To those who qualify, an oral examination may be given, if necessary.

Preference will be given in all cases to natural born or naturalized British Subjects who have been residents of Canada for at least three years, but in order to secure men of high qualifications for the work indicated, authority of the Governor in Council may be procured to admit to the above competition candidates who have not resided three years in Canada or who have not been naturalized.

An eligible list, which will be valid for a period of one year for appointments of this nature, may be established as a result of this competition.

The closing date for entry to this competition will be March 11th, 1924.

BONUS FOR ST. MAURICE PAPER

A bonus of 5 per cent. in addition to the regular quarterly dividend of 1½ per cent. was declared by directors of the St. Maurice Paper Company, Limited, at their meeting held in New York subsequent to the Union Bag and Paper directors' meeting. Dividend and bonus are payable December 24th to holders of record December 19th.

The declaration of the bonus is the first development of its kind, outside of the resumption of dividends by Abitibi, and the previous increase in the St. Maurice dividend to a 6 per cent. basis to come about in the news print group since the 1920-21 depression. This tangible evidence of the prosperity of the industry, bears out, in a measure, the reams of favorable statistics, data and opinions, that have been written about the industry.

Thinks Reparations Pact Would Stop U. S. Newsprint Imports

By F. T. HARRIS
(In Editor and Publisher.)

The settlement of the reparations question will be followed closely by the stoppage of shipments of newsprint paper from European countries to the United States. The two dominating factors which in combination at this time give publishers in this country the opportunity of securing overseas paper, are the enormously decreased consumption of paper in Europe, and the debasement of the German mark.

Russia is consuming so little paper that it is negligible in amount. In all Russia the consumption now amounts to only about one pound per capita per annum as compared with a normal pre-war consumption of five or six pounds.

In Germany consumption of paper has greatly decreased. Publishers of papers find themselves unable many times to meet their bills for paper, since advertising and subscription rates cannot be advanced fast enough to keep pace with the continued depreciation of the mark. Many of the great middle-class, which has always been the chief purchasor of newspapers, can no longer afford them and consequently find it necessary to read their daily papers in the public libraries. As a result, thousands of newspapers and magazines have been forced to suspend publication and most of the others have curtailed the number of editions and the size of their issues. In Munich alone, it was recently reported that 16 journals had been forced to cease publication, and from Leipzig comes a similar statement.

Such demoralization in two of the greatest paper consuming countries in Europe has forced manufacturers of paper to seek other markets for their product. German manufacturers find themselves with large quantities of paper on their hands over and above the domestic consumption which normally absorbs practically all made in the country. As virtually none of the paper mills in Germany are located in the occupied area, production is being maintained at pre-war levels.

Next to decreased consumption in their own country, no other factor has been of such great assistance to the paper manufacturers of Germany as the complete collapse of their currency. It has enabled them to undersell competitors from other countries in every market in the world.

Decreased consumption in Europe and intense German competition have forced paper manufacturers in Finland, Norway, and Sweden to seek other markets for their product, and so they have joined Germany in shipping to the United States paper which normally is used in Europe and other countries.

While almost every industry in Germany has been more or less crippled by the occupation of the Rhine basin, the paper industry, having practically no mills in that area, occupies an enviable position. This fact is clearly illustreated in the statement of the foreign trade of Germany for the first six months of this year which has recently been published. Exports of manufactured products, excepting paper, decreased during that period 24 per cent as compared with the first six months of last year, while exports of paper to the United States alone increased 53 per cent.

The first newsprint paper which Germany shipped to this country arrived in September, 1920. At that time consumption of paper in the United States was beginning to reach great proportions, the external value of the mark had begun its final plunge, and disturbance of domestic conditions in Germany was being reflected in a lowered consumption of paper. The combination of these three favorable conditions for export trade was immediately recognized and utilized by German paper manufacturers and their partial occupation of the paper market of the United States consequently followed. In the few months left in 1920, 21,066 tons of German newsprint had arrived on our soil. During 1921, 38,938 tons came in, and 32,838 tons in 1922. It will be recalled that the economic conditions in Germany showed slight improvement during the latter year, which accounts for the decreased shipments of paper as compared with 1921. During the first nine months of this year, publishers in the United States received 38,703 tons of German newsprint as compared with 20,332 tons during the same period of 1922.

No better evidence of the gradual collapse of the economic structure of Germany could be adduced than that presented in these figures, as economists are now recognizing that the consumption of newsprint paper in a country is as true an index of the status of conditions as that of iron and steel.

Another element which enables German paper manufacturers to quote prices below those of other countries in world marts is their low production cost on a gold basis. This feature is due again to the decline in parity of the mark, as wages and prices of raw materials and other supplies are not advanced rapidly enough to be maintained on a level equal to their gold value. The question has frequently arisen on this continent why, in the face of the falling cost of paper in Germany, publishers in that country find themselves unable to buy paper and are forced to suspend publication. The answer lies in the very reason for cheap paper, namely, that the owners of newspapers cannot charge enough for their papers and adjust their advertising rates in proportion to the depreciation of the mark. Then, too, the parity of wages is so low that only a few of the former buyers of newspapers can afford them, as has been described above.

In October German industrialists proposed the abolition of the eight-hour day to promote production, but the move was hotly opposed by the labor unions and viewed with suspicion by the French authorities. The latter pointed out that the observance of the eight-hour day was required by the laws of Germany and by the Treaty of Versailles. What the French actually feared in a lengthening of the working day was that the resulting increased production of manufactured goods would enable German manufacturers to "dump" still more merchandise in the allied countries and to underquote still further in other markets. Had this actually happened, German paper producers would have received further encouragement in selling their product overseas, and under the spell of large profits from customers in the United States and elsewhere, German publishers would have found it even more difficult to secure what little paper they consume

The virtual disappearance of Russia as a paper consuming country has cost Finland a rich and nearby market, and has caused Finnish paper manufacturers to seek overseas markets for their surplus product. In the United

States they have found one of their best modern customers. During the first nine months of this year, this country received 33,735 tons of newsprint paper from Finland as against 18,047 tons in the same period of last year. This represents an increase of 87 per cent.

Although shipments of paper to the United States show an enormous increase, the position of the Finnish paper industry is described as very unsatisfactory. Contract business, usually very brisk in the early fall, was coming in on a very small scale, according to latest reports received here. Finnish unwillingness to extend favorable payment conditions to Russia has lost to paper manufacturers domination of their former market, as Germans, Esthonians, and Swedes are selling paper in Russia upon attractive terms.

Offerings of German paper in overseas markets in which the Finnish paper manufacturers have always been able to hold their own, at prices far below what the Finns can possibly offer, has been extremely demoralizing to the paper industry of the Baltic state. Many Finnish mills have been compelled to dscontinue temporarily the operation of some of their machines, and the consequent loss of production has been recently estimated at 10 per cent of the total capacity of the country .Only the newsprint mills have been affected thus far, but it is said that mills making high grades of paper are now directly threatened.

During the first nine months of this year, publishers in the United States received 28,998 tons of newsprint paper from Norway. This is an increase of 198 per cent over the 9,746 tons shipped them from that country in the same period of 1922. The leading trade paper of the paper industry in Norway states that low prices for paper are contributing to unsettle the business. Some newsprint mills in need of orders are quoting lower prices, hoping in this way to meet foreign competition. Again Germany is found to be underbidding, but Norwegian paper manufacturers are hoping that increasing demand in the United States will provide a market for their products at profitable prices.

Adverse conditions in the industry of its neighbor are reflected to as great an extent in Swedish paper circles. Although exports of newsprint paper from that country show a very substantial increase over last year, prices are not satisfactory and several mills are said to be unable to compete on present prices. Exports of newsprint paper to the United States during the first nine months of this year were 47,332 tons, compared with 35,117 tons, an increase of 35 per cent over the same period of last year.

From the above it can be readily seen what will happen when the reparations problem is settled. Business all over Europe will be galvanized into activity, industries in Germany will be enabled to pay wages which will allow workers agan to buy their daily newspapers, and consumption of paper will jump beyond previous levels everywhere.

J. W. McCAMMON WITH WALMSLEY'S

A good part of the Industry already knows Mr McCammon, who represents Chas Walmsley & Co. (Canada) Ltd to the pulp and paper makers They and others will be interested in the following brief review of his career

Mr McCammon graduated from McGill University with the degree of B.Sc in Electrical Engineering in 1912 and after leaving the University was connected with Mackenzie Mann & Company, Limited, contractors for the Canadian Northern Railway Company on the Mount Royal Tunnel and spent two years with them as Assistant to the Electrical and Mechanical Engineer.

On leaving Mackenzie Mann & Company he became connected with the Canadian Fairbanks-Morse Company Limited, and started his connection with the pulp and paper mills through the sale of pumps to them. In 1915 he was given charge of their pump and electrical departments and broadened his field of contact with the pulp and paper mills through the sale of electrical equipment in addition to pumping apparatus.

Early in 1916 Mr. McCammon went overseas, serving both with the Canadian and Imperial Forces until the end of the war, returned in 1919 and resumed his position with Canadian Fairbanks-Morse Company.

During the years 1921 and 1922 a great deal of his time was spent on pulp and paper mill work, particularly in the application of the vacuum pumps to drying processes and the general application of electrical and pumping apparatus to pulp and paper mill service.

His primary interest now is, of course, Walmsley Paper Machines and the re-modelling and repair of existing paper machines of all makes and types. The Company proposes to manufacture at their Longueuil Works, Montreal. Warren Magazine Grinders and Watford Tremor Screens, both of which offer new features of economy in operation to the Canadian mills. They also represent Gwynnes Engineering Company, Limited, of London in Canada and Newfoundland and are studying the question of manufacturing this high grade line of centrifugal pumps in Canada. As representatives for Sir W. G. Armstrong Whitworth & Company, Limited, on the North American Continent, Walmsley's propose to carry a stock of Armstrong Whitworth drills and tool steel in Montreal, and to generally look after the interests of this Company with particular reference to their Hydro Electric Department.

J. W. McCAMMON

Forensic Paper Chemistry

(Translated from *La Papeterie*, 1057-1063, November 10, 1923, by A. Papineau-Couture

The detection of attempts to tamper with documents, either as regards the writing or the paper itself, is usually a delicate and difficult matter. We therefore consider it will be both interesting and useful if we briefly summarize the results of some very careful investigations which were undertaken to try to prove whether or not a portion of the paper examined has been strongly and unevenly wetted, and if attempts were made to erase pencil writing, in other words, if the paper has been rubbed.

When dry paper is subjected to the action of iodine vapors it assumes a different color from that of the same paper which has been first wetted and dried and then subjected to the action of iodine. When a sized and calendered paper is partially wetted and dried, and then subjected to the action of iodine vapors, the portions which have been wetted assume a violet tinge, whereas the portions which did not come in contact with water become yellow or brown. The intensity of the coloration naturally varies with the time of treatment with iodine. This experiment is readily carried out by placing the paper to be examined over a suitable dish containing some iodine in the bottom.

The phenomenon can still be observed quite clearly when drops of water are allowed to fall on the paper and to evaporate spontaneously so as not to affect the surface of the paper, which is then heated to 100 deg. C. to dry it completely. If the paper thus treated is then immersed in water after exposure to iodine, the portions which were originally wetted assume a very intense violet blue coloration, while the portions which remained dry before iodine treatment become blue.

If drops of water are allowed to fall on paper and to evaporate spontaneously and the paper is subsequently completely immersed in water and then dried, on treating with iodine vapors the spots caused by the first drops of water can still be detected, either on the dry treated paper or after wetting it. In the latter case, that is, when the paper is wetted after exposing to the action of iodine vapors, the spots are scarcely perceptible as long as the paper remains wet, but on drying again the outline shows up clearly in a light shade on a darker background.

This reaction allows of obtaining the effects of sympathetic writing merely by writing with water on a sized and calendered paper, and allowing it to dry. On treating the paper with iodine vapor the writing stands out clearly in a violet brown on a yellowish background, which on wetting changes to dark blue on a light blue background. The writing is immediately decolorized by the action of sulphurous acid. It can be made to reappear after a first bleaching provided the paper has not been wetted and the bleaching has been effected by means of sulphur dioxide gas. The reaction can thus be used for making invisible writing which can be made to reappear and disappear at will, or which can be made to reappear once and then disappear completely.

Iodine has been known for nearly a century and paper is in common use and is handled by practically every one in large quantities. The above described reactions have perhaps been known for quite a long time but were not published (at least to our knowledge), presumably because they seemed too simple and of no interest or value. But we shall now show wherein they can be of great value in showing up various manipulations to which paper may have been subjected.

When examining paper to try to find possible forgeries or other tampering, it is generally carefully examined by transmitted light or by glancing light, that is, the paper is placed practically in line with the source of light and the eye of the observer. If the paper has been rubbed energetically so that part of the material of the paper has been removed, on holding it up to the light there will be a light spot at this point. While if the rubbing has been done carefully, it can sometimes be detected by glancing light, the rubbed portion being more matte or duller on account of the displacement and partial raising up of the fibers above the surface of the paper.

If bread crumbs were used for rubbing, instead of an ordinary eraser, and if care was taken to always rub in the machine direction of the paper, it may be impossible to detect this merely by looking at the paper, no matter how carefully, especially when he rubbed portion has been written over, either in pencil or ink.

But iodine vapor shows up such manipulations very clearly, the rubbed portions assuming a brownish yellow or violet brown color, and the outline of the rubbed area showing up quite sharply.

If the rubbed paper is wetted after having been subjected to the action of the odine vapor, the rubbed porions become blue, the depth of the color depending on the length of time the iodine was allowed to act; and on drying it can be observed that these portions are not of the same shade as the remainder of the paper, but are usually darker.

On the other hand, if the paper has been rubbed so hard as to remove a part of the material of which it is composed, after treatment with iodine, wetting, and drying, the rubbed portions will appear lighter in color than the remainder. This is due to the fact that the mechanical action of rubbing has removed part of the substance (starch or size) which combines with the iodine to give the blue or brown color; so that the depth of shade of the rubbed area varies inversely as the degree of rubbing.

If a piece of paper is partially rubbed and wetted, as is done when copying in a letter press, allowed to become quite dry, and then subjected to the action of iodine vapor, the same phenomenon still occurs, but in this case the differences are not as sharp and clear cut as before. And if the paper thus treated is wetted and then dried, the rubbed portions will show up lighter than the others.

It is thus seen that whether portions of the paper have been wetted or rubbed the behavior with iodine is about the same.

In certain cases iodine will indicate the nature of the substance which was used for rubbing: the use of bread crumbs or of an india rubber eraser gives a yellow or brownish yellow color with iodine, and with the former the streaks are of a deeper hue and the paper sometimes assumes a violet tinge which is always more uniform than with an ordinary rubber.

These phenomena are due to the fact that the fibers are disturbed and turned up by the rubbing, thereby exposing a larger surface to the action of the iodine. Consequently more iodine is fixed on or absorbed by the rubbed than by the unrubbed portions.

If a blunt point, for instance, the drawn out and rounded end of a glass rod, is used to write on paper, on exposing the paper to the action of iodine vapors the writing soon appears in brown on a yellowish background, turning blue on wetting. This phenomenon can still be observed even after the paper has been calendered. Provided the paper is not wetted, the writing can be made to appear and disappear by alternate treatments with iodine vapor and with sulphur dioxide gas.

This method is far superior to the use of water for sympathetic writing. The marks made with the glass point are practically unnoticeable, especially if they are made between the lines of ordinary writing in ink. And the reaction is so delicate that it can be reproduced quite readily on a piece of paper which was placed under the one on which the writing was actually done. By prolonging a little while the action of the iodine, the writing will show up clearly, even when the most careful visual examination reveals absolutely nothing. The delicacy of the reaction is still further increased by placing the paper (or superposed sheets of paper) on a hard surface such as marble, glass or porcelain.

The explanation of this phenomenon is to be found in the fact that by the action of the glass rod the sizing substance is compacted along the lines of the writing. Consequently, as there is more material along these lines more iodine is absorbed and the shade is deeper. If the under side of the paper is exposed to the action of the iodine, the writing shows up also; but naturally it is reversed.

This last-mentioned fact naturally suggests the possibility of using iodine to detect pencil writing, as it will have compacted the sizing material in the same way, though possibly not to the same extent, as the glass rod.

When pencil writing is rubbed out with sufficient care not to destroy the surface of the paper, on exposing the latter to the action of iodine the writing sometimes appears. If the paper is rubbed so hard as to destroy the surface it becomes impossible to make the writing reappear with sufficient clearness to allow of its being read. But in this case, if the reverse side of the paper is exposed to iodine, quite frequently the writing will show up, reversed of course, but sufficiently clear to be read fluently, especially if placed before a mirror to rectify it.

If the pencil writing was originally very heavy, it is sometimes possible to reproduce it in a letter press. To do this, a piece of sized and calendered paper is moistened, as is regularly done in letter copying, placed over the iodine-treated writing to be reproduced, and immediately pressed. It is absolutely essential that the whole operation be carried out very quickly.

Of course the clearness of the results obtained depends largely on the nature of the paper. With a slack-sized, lightly calendered paper it is practically impossible to obtain anything satisfactory. And moreover, the paper can be subjected to various manipulations, which it is superfluous to enumerate, which prevent anything from showing up.

Another point of great importance is how long after they have occurred can wetting, rubbing, or writing be detected. It has been observed that irregular wetting and rubbing could be detected three months after they had occurred, and that after the same length of time letters which had been written with a blunt point could be made to appear. It has also been observed that the reaction is sharper and more delicate if the paper is first placed for about three to six hours over a vessel of water before exposing to the iodine vapors. However, though they were quite plainly visible after this lapse of time, they were much less intense than a short time after the manipulation had been carried out; and it is quite possible not to say probable, that they no longer appear after a certain period, which varies according to the intensity of the rubbing or wetting action or the heaviness of the writing.

SODIUM SULPHATE MINING

A substantial change in the royalty provisions of the Alkali Mining Regulations by a Dominion Order in Council has been made as the result of representations made by Thos. M. Molloy, Commissioner of Labor and Industries for Saskatchewan. Under the new regulations the maximum value of the unrefined product at the point of shipment has been fixed at $2.00 per ton. Therefore the royalty payable being on the basis of twelve and a half per cent of the selling value of the salts is now set so that it cannot exceed 25c per ton. Under the old regulation the royalties were based upon the selling value of the salts or brine in their natural state, which value naturally fluctuated with the market placing the producer in the position of being unable to determine his royalties in advance, and in addition making possible the payment of a royalty altogether out of proportion of the cost of production.

"The sodium sulphate industry being established in the province," stated Mr. Molloy, "would have been seriously handicapped by the old regulation and we are highly pleased that the representations made by this department have been favorably received at Ottawa.

"Only two of the deposits in Saskatchewan are being developed at the present time, one at Muskakee Lake in the north-eastern part of the province, and the other at Frederick Lake in the southern part of the province. The six deposits proved up by the Dominion Government party show an approximate quantity of between seventeen and twenty million tons of sodium sulphate. Some of the biggest deposits have not yet been touched and the estimated yield runs from one-half million tons to fifteen or more million tons."

This will interest kraft pulp manufacturers.

TO MAKE GROUND WOOD AT SHEET HARBOR

The Pulp and Paper Magazine is advised that the A.P.W. Paper Company now controls something over 60,000 acres of land at Sheet Harbor, Nova Scotia and will commence the erection thereon as early in the spring as possible of a ground wood mill with a capacity of 25,000 tons of pulp per annum.

The designing and erection of this mill, as well as its operation will be under the sole charge of Mr. W. S. Crandell, General Manager of their Paper and Pulp Department.

It is hoped to have the entire plant completed and in operation by February 1st, 1925.

ALL STEAM NOW METERED

New Bailey steam meters have been installed on paper machines 1, 2, 3 and 4 of the Abitibi Power & Paper Co. at Iroquois Falls. The meter on these machines before was adjusted to all four machines. The new meters are individual. With this installation all steam in the plant is metered.

Woodlands Section

A HAPPY SUGGESTION

For many years there has been a growing sentiment among thoughtful people, (“may their tribe increase”,) with regard to the conservation of our forests.

We owe those forests so much—they stabilize our climate protect us from flood and fire and provide us with paper, that adaptable commodity which lends itself to so many phases of comfortable living and yet, each year, thousands of trees are sacrificed for Christmas decoration purposes. Trees which, if left to mature, would fulfil a large purpose.

However, it is futile, so psychologists tell us, to say DON'T and we, therefore, say—“DO, use a substitute.”

Recently a splendid substitute has been offered and a Christmas Gift Screen—novel, inexpensive and artistic—which can be used year after year can be secured.

Save the Trees by using a Christmas Gift Screen
Made from Colored Crepe Tissue

The Christmas Gift screen is a tree made of “Forest Green” crepe paper, mounted on a back ground eight feet high and five feet wide of canary colored crepe, on heavy kraft. The tree is made sticking cut paper on a tree design. These paper sections are put on like shingles on a roof and overlap to the top of the tree. Tinsel, ribbons or colored crepe paper may be interwoven and the construction leaves many opportunities for individual touches in the decoration and the result is a very good impressionistic representation of a Christmas tree. Indeed when the Screen is hung across a convenient corner and gifts are arranged in front, it is almost enough to make a real tree purple with envy. Why not try it next year?

It is important to save the trees. It is important to foster in our growing boys and girls a respect which amounts to reverence for a tree—for, “Only God can make a tree.”

To show how realistic and decorative the paper tree is, we have obtained a photograph of it, as shown in the illustration.

TIMBERLAND TAXATION

In an open letter written to the Provincial Land Assessor of the Nova Scotia Government, Mr. Barnjum discusses wood lot and timberland taxation as follows:

“Mr. R. W. McKenzie,
Provincial Land Assessor,
Nova Scotia Government,
Halifax, N. S.
Dear Sir,—

Your letter of the 29th ultimo is just received on my return Halifax, from the text of which I assume an increase in taxation is contemplated, as increasing taxation seems to be the principal pastime of the Liberal governments both at Ottawa and Halifax.

I feel that it would simply be a waste of time for me to send any representative to discuss this matter with oyu, as suggested in your letter. The Government, so far as I am concerned, may go ahead and make its own valuation, which it has no doubt already decided upon, and I will then determine on the proper course for me to pursue.

All enlightened governments are considering decreasing rather than increasing taxes. Taxing woodlands annually at their value is analagous to taxing a farm crop seventy-five times in a single year,as it takes practically that length of time for a crop of trees to mature. The now generally accepted scientific method of taxing timber and woodlots is to make a nominal yearly tax on an assessed value of $1.00 per acre and then tax the timber when it is cut. Otherwise the landowner is forced to strip his lands as rapidly as possible in order to avoid burdensome taxation. If the government is anxious to see the province stripped of its few remaining trees as rapidly as possible then, of course, it is pursuing the proper method, and as the Government is anxious to see the province stripped of always seems to do the wrong thing, this is undoubtedly what it intends doing.

I am merely speaking for the people as, personally, I am devoting my means to the country and it makes little difference to me whether they take it away from me in taxes or whether it is devoted to my conservation work, except that I feel that I can expend the money more wisely than the Government, judging from past history.

Very truly yours,
(Sgd.) FRANK J. D. BARNJUM
Annapolis Royal N.S. December 11th, 1923

THE WORK OF THE U. S. WOODLANDS SECTION

The Woodlands Section of the American Paper and Pulp Association was organized in November, 1920, to meet the need of a department in the Association to handle problems common to the woods operations of the paper industry. Its purposes are as follows:

1.—To increase the efficiency of the woods operations of the pulp and paper industry.

2.—To encourage the practice of forestry on timberland holdings.

3.—To provide a medium for the gathering and dissemination of information which will promote the permanency of the woods operations of the pulp and paper industry.

Following is a partial list, by general subjects, of the information which the Woodlands Section has developed for its members, and which has been published, in large part in the Pulp and Paper Magazine:

A—Forest Operations

1. Economy of 4 ft. vs. long log operation.
2. Tugs and booms for open water towing.
3. Methods of sorting 4 ft. pulpwood.
4. Brush disposal.
5. Volume losses from barking.
6. Driving birch and poplar pulpwood.
7. Peeling practices for Southern pine.
8. Shrinkage in cutting up 16 ft. logs.
9. Sinkage on drives and in storage.

B—Forest Protection

1. The spruce budworm; identification and methods of control.
2. Timberland insurance.
3. Fundamental forest education.

C—Forest Investigations

1. Forest Investigations; What, Where and by Whom.
2. Number of sticks per cord.
3. Pulpwood decay.
4. Cubic ft. space of piled pulpwood.
5. Adirondack spruce increment.
6. Reforestation; methods, costs and yields.
7. Forestry for the paper industry.

D—Statistics

1. Quarterly pulpwood reports.
2. Imports of pulpwood and wood pulp.

The Section feels that the paper industry could well afford to finance its activities as a clearing house for information on woods operations, especially along the following lines, which the Section's limited funds now enable it to handle only partially, if at all:

1. **Forest Protection**
   Fire, insects and fungi.
   Methods and costs, by regions and types.
2. **Forest Management**
   Practical working plans.
3. **Forest Taxation**
   Legislative relief.
4. **Reforestation**
   Methods, costs and yields.
5. **Woods Operation Costs**
6. **Logging and Driving Operations**
   New methods and machinery
7. **Special Investigations**
   Pulpwood decay, pulpwood supplies, etc.

To rest content with results achieved is the first sign of business decay.

PULPWOOD IN 1924

The September Pulpwood Report of the U.S. Woodlands Section shows that while the percentage of stocks and contracts to annual consumption was about the same in all regions for 1923 as contrasted with 1922, yet the contracts, except in the Lake States, were in each case heavier than were reported last year.

Prices in every grade, in all regions, increased in 1923 over 1922. What will they be in 1924? Woods labor is high now, very high. Stocks are relatively low, and the uncertainty of the threatened Canadian pulpwood embargo further complicates the situation.

All this only serves to emphasize the advantage which pulp and paper companies will have ten, twenty-five and fifty years hence which own timberlands, protect them from fire, and log them so as to insure successive crops of pulpwood. The handwriting is on the wall for those who will read. Each year pulpwood is a little more expensive, and the available supply a little less. What are you going to do about it?

Is your company looking ahead, and protecting its future interests, or is it cleaning up on its investment and quitting?

PAPER FROM HARDWOOD

The Newton Falls Paper Company owned by the McGraw-Hill Company, has taken a big leap forward in paper making by the perfecting of a process for the manufacture of book and catalog paper of the highest grades from hardwood. Book, bond, ledger, offset, and cover paper is now being turned out. Beech, maple, and birch have so far been mostly used for the purpose, but it is believed that other hard woods can be utilized as well. The company has a large area of hardwood timber land, with standing trees enough to last from 75 to 100 years. It is to be hoped that the supply will be maintained by careful arboriculture.

Mr. W. Gerard Power, one of the active members of the Canadian Woodlands Section is chairman of the Quebec Harbor commission and has been made a member of the Legislative Council for Stadacona Division.

ANGLO-AMERICAN PAPER COMPANY LIMITED

The formation of a large new Company has just been completed, namely Anglo-American Paper Company Limited, Head Office at Merritton, Ontario. This Company has been incorporated under the Dominion Companies Act, with an authorized capital of 10,000 preferred shares of the par value of $100 each, and 10,000 common shares.

The Charter gives the Company the right to manufacture pulp and paper of all kinds.

The Officers of the Company are as follows:

William H. Howe, President
Lauren H. Gardner, Vice-President
Leo. E. Charles, Treasurer
Chas. V. Syrett, Secretary.

The construction of the first new mill will be proceeded with in the early spring.

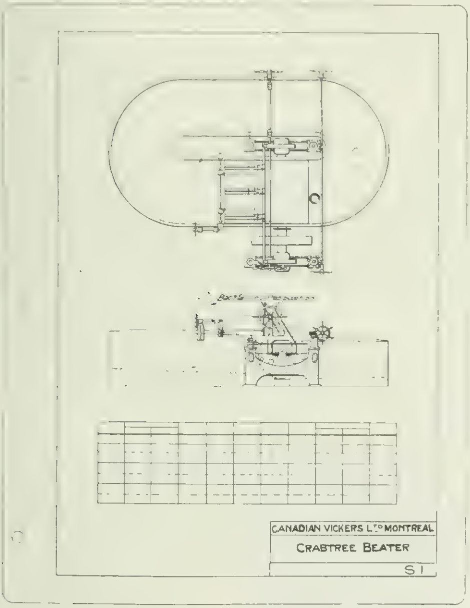
Pride is an uneasy and uncomfortable temper, always restless and dissatisfied. Humility alone can give peace.

A New Beating Engine

By E. S. CRABTREE, Montreal.

During the last few years paper-makers have turned their attention to the beater room in an effort to speed up production. Experiments covering a period of years have been made in various countries with more or less success. These have resulted in getting a faster circulation of the stock, thus allowing of a greater consistency, and would be better named if called "Mixers".

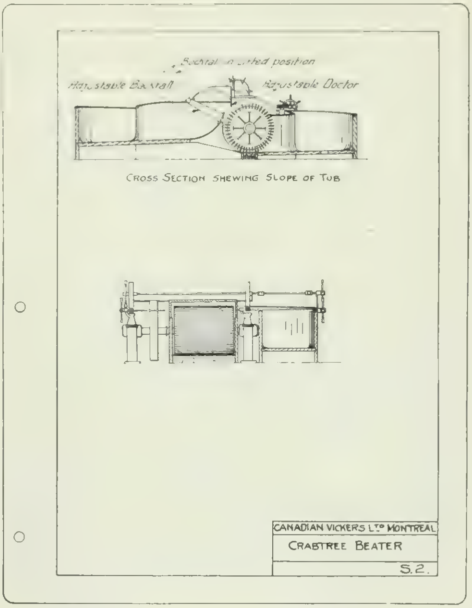
The tests carried out by myself were made in various adaptations of the Hollander type of beater and different devices were installed to increase the circulation. By building the tub with a slant from the foot of back-fall to the front of roll, allowing for the rise to the bed-plate, so that the stock would flow by gravity increased circulation resulted and in the case of sulphite papers gave good results. On kraft pulp however, this increased circulation did not materially help the beating, in fact, owing to the speed at which the stock went under the roll, the beating operation took longer to get the usual results. To get over this I increased the height of the back-fall and carried the doctor in the hood or beater-roll cover down further. This allowed the necessary resistance so that the revolving roll could not "wash" the stock away between roll and bed-plate, and resulted in a saving of about half an hour in beating.



Plan and Side View

I next turned my attention to the actual beating, increasing the speed of the roll. Owing to the fact that a large roll was being used, 66″ Diameter built to run at 90 R. P. M., it was not feasible, for purposes of safety, to run more than 115 R. P. M., with this beater However, the beating time was materially reduced, while the extra power consumed was very small in proportion to the results achieved.

About this time one of my customers complained of lack of strength in some kraft pulp I had supplied and on investigating the matter I found the beater rolls were running 1270′ per minute, this being about 25%, less than normal on account of high water causing black-flooding of the mill turbines. They got between 60-70% test on a 30 lb. sheet (24″ x 36″) after the beating was carried on for five and six hours. I had some of this pulp shipped to the paper mill of the Forest Products Laboratories, Montreal. By running the beaters at various speeds up to 2500′ per minute. I found the best results at the maximum speed and had no trouble in getting a test of 100% and over on a 30 lb. sheet.


Backfall in lifted position
Adjustable Backfall
Adjustable Doctor
CROSS SECTION SHEWING SLOPE OF TUB
CANADIAN VICKERS LTD MONTREAL
CRABTREE BEATER
S.2.

Longitudinal and cross sections

It was also found that due to the high speed at which the roll was operating, it was not necessary to have the roll lowered down on the plate as much as at the lower speed, and this resulted in a much longer and stronger fibre. As the roll was only brushing, very little more power was used, about 20% more than when the beater was simply circulating round with the roll up.

The accompanying designs show an improved beating engine for use in the beating and hydrating of rags, wood pulp, waste papers, etc., but particularly for wood pulp, especially sulphate pulp for for manufacturin into kraft wrapping papers.

In the ordinary beating engine, the beater roll is built to run at a speed of 1300′ to 1600′ per minute. From beating tests I have made the best results were obtained when working at a speed of between 2500′ to 3000′, and the purpose of his invention is to build a beating engine that will operate successfully at this high speed.

For purposes of safety the diameter of the roll has been reduced as much as possible, and this allows of a substantial increase, as much as 50%, in the width or face of the roll.

The tub or vat is of the usual Hollander design, well dished, with flowing curves, and with a slant towards the front of tub from the foot of back-fall, so that the best possible circulation can be obtained. In place of the usual mid-feather, an oval space is used, in which is located the lighter for the beater, which arrangement does away with the shaft crossing through the tub to the far side. The back-fall is built up solid to the usual height, from which point a steel plate is raised by mechanical means to any desired height. The height of the back-fall plays a very important part in the beating of stock. In the finer papers made from rags, the back-fall should be down on a level about the centre of shaft, and raised for papers made from chemical pulp. For light weight papers it will be found desirable to raise this as high as possible, varying this according to the weight of paper to be made and the quality desired.

The back-fall can be adjusted to any desired height above the centre of shaft, the adjustment being made by means of a hand wheel on side of beater, or by other means.

An adjustable doctor is provided, since, on account of the high speed of the beater roll, there is a decided tendency for the stock to go round with the roll, especially when the back-fall is raised. To overcome this a special type of doctor has been designed, this doctor being so carried that a very close adjustment to the roll is possible.

This doctor is shown on the general plan of the beating engine. It is carried on pedestals which rest on the lighter arm on each side of roll, and in such a manner that when the roll is raised by means of the quick lift hand wheel, or lever, or when the roll jumps on account of lumps going under same, the doctor will rise to the same extent. This is a particular feature as the adjustment is very close to the roll, and without some such arrangement there is danger of the roll striking the blade with disastrous results.

NEW RIORDON PLAN REQUIRED

The reorganization of the Riordon Company, Limited, under the plan of reorganization dated September 7, 1923, has officially been abandoned. The situation is described through a circular letter forwarded to depositors under the reorganization plan by the reorganization managers. The response by shareholders and unsecured creditors, while at first somewhat encouraging, did not turn out to be sufficiently substantial to allow the plan to be carried out. Probably the chief contributory factor to the failure of shareholders and unsecured creditors to comply with the requirements of the plan was the fact that the sulphite pulp market broke severely very shortly after the details of the plan were announced. With the abandonment of this plan, the situation is now in the hands of the bondholders who have undertaken to formulate a new plan.

Following is the text of the circular letter being sent out, which is self-explanatory:

"To the depositors under the reorganization managers' agreement of September 7, 1923:

"The above plan of reorganization was based upon underwriting contracts for prior preference and common stock covering $5,416,666 of the cash requirements of the plan. These contracts were subject to certain conditions, and as the conditions were not met within ninety days from the date of the plan, the underwriters were thereby released from their obligations. As this underwriting was essential to the plan, the necessary result is the abandonment of the plan.

"Accordingly notice is hereby given that the plan of reorganization, dated September 7, 1923, has been abandoned, and that all depositors under the reorganization managers' agreement, upon surrender to the Montreal Trust Company, Depositary in Montreal, or to Old Colony Trust Company, agent of the Depositary in Boston, of their respective certificates of deposit or participation receipts, endorsed in blank, or, in the case of depositors to whom no certificates of deposit have been issued, without application or further action by such depositors, will be entitled to the return of all stock certificates or other securities deposited by them, the release of all assigned claims, and the repayment of all instalments paid on account of subscriptions, without any deduction for expenses.

"This applies to depositors of general mortgage 6 per cent. bonds of Riordon Pulp and Paper Company, Limited, who deposited directly with the reorganization managers after the announcement of the plan on September 7, 1923, by sending their bonds to the Montreal Trust Company, Depositary, in Montreal, or Old Colony Trust Company, agent of the depositary in Boston; but does not apply to deposits of such bonds with the 6 per cent. bondholders' committee under deposit agreement of November 4, 1921, through the State Street Trust Company, in Boston, as depositary for the committee, or its agents The Royal Trust Company, in Montreal, which will continue to be governed by the terms of that deposit agreement.

"The 8 per cent. first mortgage and refunding bonds of Riordon Company, Limited, and the general mortgage 6 per cent. bonds of Riordon Pulp and Paper Company, Ltd., have been in default for two years and a half, and the bondholders have received no interest during that time. Meanwhile it is only through the efforts of the bondholders' committees, and by raising large sums directly or indirectly on security of the deposited bonds that it has been possible to provide the temporary financing necessary to keep the property intact, the mills in operation and the enterprise a going concern.

"The plan of September 7, 1923, was formulated for the purpose of giving to the shareholders and unsecured creditors of the company an opportunity, by contributing substantially to the new money required, to participate correspondingly in the ultimate profits of the enterprise. The lack of any general response on the part of the shareholders and creditors makes it evident that they are not prepared to assume the burden of financing the reorganization.

Accordingly the two bondholders' committees have undertaken to formulate a new plan for the reorganization of the property. Negotiations are actively in progress, and the plan will be announced as soon as possible.

(Signed)
"Wallace B. Donham,
"I. W. Killam,
"Reorganization Managers."

FORT FRANCES FAVORS BACKUS

According to the Toronto "Telegram", the Backus interests would greatly benefit by an agreement which the town council of Fort Frances has voted to submit the electors in the forthcoming municipal elections. In brief this proposed agreement guarantees to Backus, pending legislative concurrence, a fixed assessment upon his plant for 20 years of $25,000—the plant is assessed now at $1,280,000—a supply of pulpwood sufficient to last a 200 ton per day mill for fifty years, the right to export power, and the town further agrees to secure for Backus the necessary provincial legislation to make possible all these things.

Premier is Emphatic

Premier Ferguson's letter to the clerk of Fort Frances in no uncertain terms informs that municipality that it is stepping far beyond its jurisdiction in assuming such undertakings. It points out that the policy of the Government is averse to power export, that the supply of wood to any concern is purely a provincial matter, and that the municipality under existing legislation has no right to grant fixed assessments, as they are essentially in the nature of bonuses, which are forbidden now by law as between municipalities and industrial concerns.

The Backus interests propose to increase their mill capacity at Fort Frances from 100 to 200 tons of newsprint paper daily. They ask that their fixed assessment be made retroactive for 2 years, which a request of a forgiveness of two years' taxes already in arrears.

A joint committee of the Town Council and Board of Trade has recommended that the fixed assessment of $25,000 be allowed on existing Backus plants and that the fixed assessment for the proposed additions be placed at $75,000.

POWER SHOW SUCCESSFFUL

Enthusiastic praise by both exhibitors and visitors marked the Second Exposition of Power and Mechanical Engineering held in the Grand Central Palace, New York City, from Monday, December 3, through Saturday, December 8, 1923.

The diverse and excellent exhibits proved to be great attractions to a large group of responsible executives and engineers. This year the Exposition comprised both main and mezzanine floors of the Palace and it is a pleasure to report that all the visitors seemed to be interested in the entire show as the crowded aisles of the Exposition proved.

The high-pressure boiler display was made up of a series of drawings of boilers in operation or in progress of installation each operating at 800, 1,200 and 1,500 lb. per square inch.

The exhibit devoted to combustion equipment was probably the largest and consisted of showings of water-tube boilers, stokers, oil burning equipment, coal pulverizing and burning machinery and equipment, superheaters and economizers, air preheaters, stokers, soot blowers, grates, forced draft apparatus and ash hoppers and grates.

The exhibits devoted to boiler and turbine room instruments were probably the most interesting as the small size of the devices enabled them to be shown under actual operating conditions.

There were several V-notch meters under operating conditions, C O and C O_2 recorders, meters for coal, for water, gas, air, thermometers, tachometers, temperature controllers, draft gages, water gages, low water alarms, etc.

Power transmission equipment contained many interesting exhibits of ball bearings, beltings and belt drives, herringboned gearing, flexible couplings, shafting, pulleys, friction clutches, and belt fastenings.

The material handling equipment featured coal and ash-handling systems, scales and weight larries and steel conveyor apparatus. One manufacturer showed a working model of a skip hoist with suspended coal bunker weight larry and grab scraper. Steel belt conveyors and bucket conveyors were shown by others.

WHY ALBERTA COALS SHOULD BE USED IN EASTERN CANADA IN PREFERENCE TO THE IMPORTED ANTHRACITE

First, they are a Canadian product, and the value will help to offset the unfavorable trade balance.

Second, as a fuel they will perform the service now performed by the imported Anthracite. They are free from the impurities which will be increasingly found in the Anthracite. Once lighted they will continue to burn under any condition of draft without attention.

When fired in the manner advised a hot fire may be obtained in a few minutes, or coal may be placed in such a manner that it will remain hot for days.

As there is no unburned coal in the ashes consequently there is no sifting of ashes required.

The Alberta Coal Mining Industry is like a factory working on half-time—expensive operation, high overhead and a dissatisfied staff, simply because there is insufficient market for its product.

Alberta has 14 1-2 per cent of the world's coal resources. It has 72 per cent of the British Empire's coal resources—it has 87 per cent of Canada's coal resources. In round figures 1,035,629 million tons, or sufficient to supply Canada's coal at the present rate of consumption for thirty-two thousand years.

One million tons of coal shipped from Alberta to Eastern Canada every year would mean a saving to Canada of 10 million of dollars, and provide work at a salary of $1,500.00 per annum for 6,666 additional workers or new population.

In addition by taking into account the travels of each $1,500.00 spent by each of the new workers it provides an equal living for twice that number to provide them with the necessaries of life with the established industries of Canada, based upon the minimum number of times (3) which the dollar turns over in one year.

On this basis a new market of one million tons of coal provides a $1,500.00 a year job to 20,000 men and allowing a family of four to each worker it means supporting a population of 80,000 spread all over Canada.

Let the reader work out along the same lines what it would mean if all of Eastern Canada's Domestic Coal (approximately four million tons) were provided on the same basis. Sufficient for a prosperous city of 320,000 people!

Canada's present purchases of this volume of coal abroad mean that it is building these cities in some other country.

PULP AND PAPER NEWS

It was announced in Toronto last week that the manufacturers' agency business of the late Aubrey Hurst, paper representative, Ellis Building on Adelaide Street, had been taken over by Walter Dickenson, manager of the paper department of Brown Brothers, Limited, Toronto, and B. G. Whitelaw, the new firm to be known as Whitelaw, Dickenson & Company. Mr. Dickenson, who is widely known in the Ontario paper trade, has been manager of the paper and business supplies department of Brown Brothers for the past ten years and has been with the company for twenty years. The late Mr. Hurst died about a year ago and the business since then has been carried on by Mr. Whitelaw, who was with the firm for sixteen years. The two men are throughly familiar with the paper game and in entering the firm Mr. Dickenson has been actuated by the belief that there is a great field in Canada for British papers. Among the British firms now represented by the Toronto company are Thomas De La Rue & Co., Ltd., and Charles Goodall & Son, Ltd., London, England. Mr. Dickenson, who for some years has been a valued member of the Mills Relations Committee of the Canadian Paper Trade Association, has received letters from the members of the committee in which they regret his resignation and speak appreciatingly of his services. A few days ago he was waited upon by his associates in the paper trade and presented with a gold watch as a token of the esteem in which he is held by his many friends in the industry.

A. P. Costigane, secretary-engineer of the Ontario Pulp and Paper Makers' Safety Association, has returned to Toronto after a visit to the plants of the Howard Smith Paper Company and the Glengarry Pulp and Paper Company at Cornwall and the Provincial Paper Mills, Limited, at Mille Roches. Mr. Costigane reports that great extensions have been made at the Cornwall milll of the Howard Smith Paper Company and in the making of these extensions a careful eye has been kept with a view to reducing physical hazards to a minimum. Improvements have also been gone ahead with at the Provincial Paper Mills plant at Mille Roches. The old boiler house has been torn down and the somewhat unsightly part of the plant has been converted into an up-to-date machine shop. In this case also physical hazards have receiveed due attention. The accident record in both mills is fairly good and gives prospect of even greater improvement during the coming year. The Glengarry Pulp and Paper Company is operating at capacity turning out a good grade of groundwood pulp and, although a small plant, the machinery is well guarded and the management is alive to the necessity of preventing accidents of all kinds.

The Pulpwood Commission will resume its sittings in Ontario on January 14th at Port Arthur. From Port Arthur the Commission will go to North Bay, Sault Ste. Marie and Cochrane. During March sittings will be held in Quebec, the latter part of the month being spent in New Brunswick, with sittings at Edmunston and Riviere du Loup. On April 1st the Commission will leave for Winnipeg, Edmonton and Regina and from the latter point the members will go to British Columbia where several sittings will be held. It has been pointed out by the Commission that while they have the power to swear witnesses they do not propose to use it but will call for voluntary testimony only.

While working on a platform at the wallpaper plant of the R. N. Boxer Company, Long Branch, near Toronto, a few days ago, Joseph Andrews, aged 38, lost his balance and fell a distance of eight feet to the concrete floor beneath receiving fatal injuries. He died within an hour after his admittance to the hospital. Mr. Andrews had been with the company for seventeen years and leaves a wife and one child.

P. B. Wilson, Vice-President of the Spanish River Pulp and Paper Mills, Limited, and a resident of Sault Ste. Marie, Ont., received the congratulations of many friends in the paper trade this month on the occasion of his birthday. Mr. Wilson was born in London, England, Dec. 20, 1866.

The first issue of "British Trade", a new publication being put out as the official organ of the Canadian Association of British Manufacturers and their Representatives, is to hand. The paper, which will be published monthly, is designed to further the interests of British trade in the Dominion and is published by Weston Wrigley, No. 8 University Avenue, Toronto.

The Fred W. Halls Paper Company, Adelaide Street, Toronto, has had printed and mailed an attractive piece of direct-by-mail advertising done on *Tanton*, S. C. book paper made by the Howard Smith Paper Mills. It is a new sheet for book jobs, folders and half-tone printing. Many printers are using the new line in the place of the higher priced papers owing to the excellent way it takes half-tones, line cuts or zinc etchings. It comes in all sizes and will fold without breaking. Printed matter on the folder assures the trade that "Tanton Book opens the door for profits for the printer and satisfaction for his customer" and on the next page there is a demonstration as to how it takes printing plates in one or more colors.

Following his return from New York, S. R. Armstrong, of the Mattagami Pulp and Paper Company, Limited, Toronto, is now spending some time at the mill at Smooth Rock Falls, Ont. It is expected that the third digester which is being lined will be ready for operation by the first of the year. This will complete the relining of all the digesters, the combined capacity of which is 150 tons daily of unbleached sulphite pulp.

A visitor to Toronto last week was Frank J. D. Barnjum, of Annapolis Royal, N. S. the well-known Canadian conservationist. While in the city Mr. Barnjum took occasion to comment upon the heavy export of Christmas trees from various parts of Canada and stated that the depletion of young growth was becoming most alarming. During the present month no less than 750,000 fir, balsam and cedar trees have been shipped from New Brunswick across the border. The farmers receive on an average only 2½ cents each for these trees while the American contractors realized all the way from one dollar upwards. The wholesale export of Christmas trees was rapidly undermining the future supply of pulpwood, not only in the Maritime provinces but also in Ontario and Quebec, said Mr Barnjum.

Cameron & Fraser, paper and twine dealers, 45-49 Simcoe Street, Toronto have sent out to their customers in the paper trade a neat little telephone number pad, a feature of which is that the pad, neatly indexed, is above the mouth-pice of the telephone, instead of below as is the case with many of those now in use. The pad is a patent one and is made by the Copp Clark Co., Ltd., Toronto.

The last issue of "The Crest" the house organ put out by the Howard Smith Paper Mills, Limited, is a particularly fine number, being printed on the company's Bard of Avon line of paper. It has a lot of interesting reading matter, including an illuminating article on the origin of watermarks, and a number of good business-getting paragraphs.

John Robb, engineer for the Dominion Bridge and Engineering Works, Montreal, was a business visitor to Toronto last week.

R. A. McInnis, mill manager of the Abitibi Power and Paper Company, Ltd., Iroquois Falls, Ont., was recently elected honorary president of the Iroquois Falls Board of Trade.

The International Fibre Board Company, whose plant at Penetanguishene, Ont., was destroyed by fire, is now assembling its plant at Midland and will commence operations there by the first of the year.

The Interlake Tissue Mills, Limited, head office Toronto, have evolved for paper towel users a new vertical towel cabinet which has several commendable features. It will dispense with the standard single fold towel and instead of the towel being withdrawn from the bottom as is done with the present horizontal cabinet the towels are withdrawn from the front of the cabinet level with the arm. This permits of an even tension and eliminates the annoyances of pieces of towel being withdrawn and water dripping down the arm. It is refilled from the top and is attached to the wall with two screws only. It also conserves space and is made in green or white.

W. W. Sunderland, president of the Miami Paper Company, West Carrolton, Ohio, was a caller on the paper trade in Toronto last week.

C. Nelson Gain, until recently general superintendent of the Don Valley Paper Company, Toronto, and who has succeeded to the general managership of the mills of the Garden City Paper Company, St. Catharines and Merritton, Ont., was given a tangible demonstration of the esteem in which he is held by his old employees at the Don Valley a few days ago, when the operatives met and presented him with a walnut smoking set. The gathering was presided over by J. G. Worts, manager of the company, who expressed the regret the company felt at Mr. Gain's departure, and wished him on behalf of the employees and the management all success in his new sphere. He then called upon John McKenzie, the superintendent, to make the presentation and he also added words of appreciation and commendation of Mr. Gain's many qualities as a man among men and as an efficient executive officer. The recipient of the gift made a suitable reply in which he remarked that while he was leaving the Don Valley he was remaining in the industry and he hoped to be able to keep in touch with those with whom he had dwelt so many years in harmony. Mr Gain has taken up his residence in St Catharines.

A despatch from Detroit received in Toronto last week announced that Clifton Howe, dean of the School of Forestry of the University of Toronto, has been mentioned as possible successor to Professor Filbert Roch, who resigned seveeral months ago as director of the Forestry School of the University of Michigan, Ann Arbor. The position has been left vacant because of inability to find a suitable man.

An agreement is reported to have been reached between the City of Fort William and the Great Lakes Pulp and Paper Company, whereby the latter will undertake to erect a plant in that city at a cost of not less than $3,000,000. One unit, the pulp mill, is to cost $800,000 and is to be in operation in a year's time, and the paper mill, which is to cost $2,200,000 is to be completed and in operation within two years. The plant will have a capacity of 100 tons of newsprint daily, and no fewer than 660 men are to be employed 250 working days each year, according to the agreement.

L. R. Wilson, the newly named general manager of the Abitibi Power and Paper Company, Iroquois Falls, Ont., has made arrangements for a turkey to be delivered at Christmas to every employee of the Abitibi Company whether in the mill, woods, merchandizing, townsite, forestry or transportation departments, and who is a householder in Iroquois Falls, the Wye, or Little Canada.

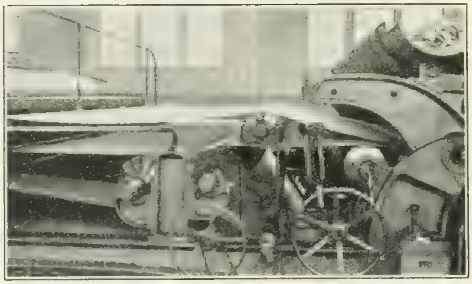
NEW BRUNSWICK NEWS

Following the decision of the appeals branch of the New Brunswick Supreme Court that the judgment in favor of the Bathurst Company, pulp and paper manufacturers of Bathurst, N. B. was entirely proper, the Trades and Labor Congress of New Brunswick demands amendments to the compensation Act. The Trades and Labor Congress has been holding mass meetings in protest against bringing the cases affecting the compensation act into court. According to spokesmen of the labor body, the intention, when creating the provisions of the act was to prevent recourse to the courts. The labor men claim amendments must be made and ask that a special session of the New Brunswick House of Assembly be called to pass the proposed amendments. It is their view that the employers should be forced to accept the decision of the Workman's Compensation Board of the province as final.

The Bathurst Company refused to pay levies amounting to $62,000 for two years. The board instituted court action, and won two minor verdicts. When the real battle started, the Bathurst Company fought the attempts of the board to collect very strenuously. It was pointed out that the board had refused to recognize the fact that the company has had in operation for some years a compensation system that has proven satisfactory. The board refused to deduct from the levy for each year. It was also pointed out that the New Brunswick Workman's Compensation Board is the most expensive compensation body in existence, and that sixty per cent of the moneys collected are spent on expenses and salaries of the board and attaches rather than in compensation. Finally, it was contended that the system of exacting compensation taxes from employers is entirely erroneous, as under the present rule, the employer bears the entire burden of taxation. The employee should contribute a pro rata share. But the board has been singularly obstinate, particularly in matters affecting the pulp and paper industry. That there is need of a new compensation board or the pulp and paper industry as well as the lumbering industry in New Brunswick will continue to suffer cannot be gainsaid. And there is need also for revision of the compensation act in the opinion of many pulp and paper executives.

SEEING IS BELIEVING

If one heard the statement made that paper could be run over a machine so steadily as to give the appearance of being stationary it would be difficult to believe. The accompanying photograph, however, proves this is not only a possibility but an accomplished fact. The picture shows the draw between the first and second presses o nthe 232-inch newsprint machine at the Belgo Paper Company at Shawinigan Falls. This machine was built by Chas. Walmsley & Co. and is driven and the speed controlled by the Harland Interlock Electric Sectional Paper-Machine Drive, and the machine was running at 755 feet per minute while the photograph was taken. A very fine stop was used on the camera and a 4-minute exposure made. The distance between the rolls is about 5 feet and of course the sheet of paper is unsupported over this distance. The fact that a 4-minute exposure shows no vibration whatever in the sheet is proof of the remarkably steady draws and the perfect synchronization of the speed of the different parts of this huge machine.



A 4-minute exposure of a paper machine running 755 feet per minute

S. W. JENCKES DEAD

Sylvester Jenckes, former head of the Jenckes Machinery Company, of Sherbrooke, Que., and St. Catharines, Ont., died at St. Petersburg, Fla., last Wernesday night at the age of 69. Mr. Jenckes who was in residence at his summer home, succumbed to a stroke.

The late Sylvester Jenckes was prominent as a manufacturer of engineering equipment much of which is in use by the pulp and paper industry, but disposed of his business and plants tothe Canadian Ingersoll-Rand Company during the war. Mr Jenckes, who was formerly mayor of Sherbrooke, went south three years ago in search of health.

COMPRESSED AIR IN A PAPER MILL

At the Three Rivers mill of the International Paper Company, the four machines are now turning out newsprint at the rate of 975 feet a minute. It would be quite impossible to do this without the aid of compressed air, says "The Compressed Air Magazine". Compressed air is utilized to lace the narrow ribbon of a new sheet of paper through the rolls of the press section and through the rolls of the calender. To do this by hand, with the machine running as fast as it does, would be extremely hazardous. In fact, it would be the height of folly to try to work a new sheet through a machine operating at a speed of more than 700 feet a minute.

The same serviceable medium is employed to cut one sheet before starting another one; compressed air is used to cool the calender rolls; compressed air shoots the paper from the calender rolls to the winding rolls; compressed air blows scrap paper from the machines and winders down to the beaters for reworking; and compressed air operates the doors in the floor at the wet end of the several machines by which "wet broke" is sent to bins in the cellar for re-use.

The final handling of the paper in the machine room consists in transferring the sheet from the winder roll to the splitting machine where the original roll is rewound and cut into rolls of suitable width for the printing presses of the ultimate consumer. Afterwards, these rolls are passed on to the shipping department where they are enveloped in wrapping paper, weighed, marked and loaded aboard the awaiting cars or carried to the near-by dock for water transportation.

The main compressor plant of the Three Rivers mill consists of two Canadian Ingersoll-Rand 16 and 10x12 inch machines of Type P.L.B-2. They are driven by electric motors at a speed of 225 revolutions a minute, and they maintain a pressure of 100 pounds. In conclusion we might point out that compressed air is employed extensively in the blacksmith shop and also in the machine shop, where it operates air drills, chippers and calkers, riveting hammers, etc. Compressed air likewise drives tools used in doing all sorts of repair work throughout the establishment; compressed air cools motors and bearings, and it is utilized to clean valves so that they can be closed tight and thus avoid the loss of considerable quantities of stock.

WHEN AN ORDER IS NOT AN ORDER

Maybe you've always thought that "orders is orders." Well, they "ain't." "An order is not an order when it is contingent upon future conditions. An 'at once' order, where there is a past due account is not an order—it is an embarrassment."

"An order for $1,000 from one who is not entitled to credit in excess of $200 is not an order, it is a grievance."

"An order for new account, without reference, is not an order, it is a clog in the wheels and may become a source of bitterness."

"An order not plainly or correctly written is not an order, it is aggravation."

"An order that does not show every agreement and every special condition entered into between the salesman and the customer is not an order—it is a breeder of misunderstanding and dissension."—Mutual End Points.

UNITED STATES NOTES

The Treasury Department last Friday lifted the anti-dumping ban against imports of newsprint paper from Sweden. Director Camp of the Customs Service approved the request of the Collector of Customs at Baltimore for the withdrawal of dumping notices covering newsprint paper from Sweden because of the great difference between quantities purchased there for home consumption and for exportation to the United States.

William Randolph Hearst, editor, publisher and moving picture magnate, was present in the Supreme Court, New York City, last week for the opening session of his suit to annul a contract made in 1920 for the purchase of the Dexter Sulphite Pulp and Paper Company at Dexter, N.Y., for $3,500,000. The case is being tried before Justice Nathan Bijur. Max D. Steuer, counsel for Mr. Hearst, alleges conspiracy and bribery in the inception of the contracts. He accused Charles F. Zittel, former representative of the publisher, of complicity. Hearst paid only $100,000 of the total amount and seeks court action to annul the contract which calls for $3,400,000 more. James E. Campbell, President and Treasurer, and Clarence W. Campbell, Vice-President of the Dexter Company, are the defendants. They are represented in court by Former Supreme Court Justice Samuel W. Seabury and ex-Governor Nathan L. Miller, as counsel. Mr. Seabury on behalf of the mill owners denied knowledge of any attempt at bribery and stated that Zittel is in Hearst's employ at the present time. Mr. Hearst testified for three hours Friday regarding negotiations that led up to the contract. Mr. Seabury declared in his opening for the defence that he would prove that Hearst's real reason for rescinding the contract was not because Zittel had been bribed, but because the price of newsprint paper came down and the editor felt he no longer needed the mill.

Exports of paper from the United States during October were valued at $2,118,841, an increase of approximately 5 per cent. over those of September, 1923, and October, 1922, according to compilations by the paper division of the Department of Commerce.

United States Trade Commissioner Livengood at Havana, Cuba, informs the Commerce Department that investigations made in Cuba disclose that despite the preferential treatment of imports from the United States, under Cuban tariff laws, American paper products are being underquoted by European mills. In some lines, reported Commissioner Livengood, this fact has led to a serious undermining of American trade. The fact, he found, that American mills can make quicker and more certain deliveries enables the American exporter to withstand a certain amount of underselling, but with the prices now prevailing the Cuban buyers are willing to risk the uncertainties of delivery in order to avail themselves of the low prices offered by European manufacturers. Disproportionate freight rates have aided the European mills in offering their low prices in addition to the lower manufacturing costs. An example of this is seen in the fact that freight rates from Christiania to Havana are no higher than from New York to Havana

Scott C. Bone, Governor of Alaska, in his annual report, expresses a hopeful view of the outlook for the development of pulp and paper enterprises in Alaska. He declares that, although some of the projects which have been pending for several years have not yet eventuated, headway was made in the past year toward the establishment of at least one such important project, and it is believed that the coming year will witness a realization of dreams in this respect.

According to a report of Consul-General Anderson from Holland, the paper industry of the Netherlands has been distinctly prosperous in 1923. Imports have declined and exports have greatly increased. In the exportation of newsprint, Great Britain and Belgium have been the best customers, but 2,059 tons were shipped to the United States. Exports of book paper containing ground wood were somewhat less than last year, but this deficiency was made up by exports of finer grades of the same class of paper free from groundwood. Exports of fine bond and similar papers also showed a material increase.

The latest report of the Committee on Paper Specifications was submitted last week to the Joint Congressional Committee on Printing. It was made over the signature of F. P. Veitch, of the Paper Laboratory, Bureau of Chemistry, who is chairman of the specifications committee. The report covers the new paper specifications for the Government Printing Office for the fiscal year beginning March 1. Among important changes made in specifications is the matter of the new limit placed on the quantity a contractor may be required to supply on any one specification which, under the modification, is put at 25 per cent. in excess of the total estimated quantity contracted by him as provided in paragraph 12. Other changes are one which has the Public Printer relieve the contractors of the burden of hauling, one changing the item, "Strength" to read "Bursting Strength"; another grouping together and making alike as to stock composition USMO safety, writing, and safety writing papers because all three of these safety papers are used for much the same purpose and often together. Several new classes of paper have been added as follows: Rag opaque machine-finish 30-pound book, record manifolding bond, onion skin, white sulphite bond, jute tag-board, and desk blotting paper, in order to introduce lower priced but good quality papers.

Harry Zimmerman, brother-in-law of Jacob Kindleberger, president of the Kalamazoo Vegetable Parchment Company, is promoting a new paper mill for Battle Creek, Mich., which if present plans materialize, will be erected at a cost of $1,500,000. The mill will be equipped to make a grade of parchment and waxed paper intended largely to supply the Postum Cereal Company and the Kellogg Toasted Corn Flakes Company. Mr. Zimmerman was identified in the organizing and with the management of the Kalamazoo Vegetable Parchment Company.

CANADIAN TRADE CONDITIONS

Although business generally in the pulp and paper arena continues somewhat draggy there has been an improvement in some quarters and sales in some lines have been slightly greater in volume during the past week. In most cases the volume of business is not as great as the season should warrant although some jobbing firms report a fair volume of selling and some of the mills, notably the makers of box board, are beginning to book more orders and the mills in consequence are running more steadily. For a time box board mills, in some cases, were running only three or four days a week and some of them have been closed down for repairs. They are beginning to get busier now under the impetus of somewhat improved conditions in the paper box manufacturing trade and it is believed that the demand for board will go on improving. Printing houses are fairly busy in the catalogue department and although the trade on the whole is quiet some of the larger printing plants are making very good requisitions for book paper and the mills manufacturing this line of paper are running steadily but with less than the usual orders booked ahead. As a rule the printers are only buying as they require the stock for contracted jobs and there is no speculative buying of paper either by printers or paper jobbers. Bonds, ledgers and various classes of writing papers are only in fair demand while manufacturers of tissues, toilets and light weight papers generally report a steady demand and normal business. Manufacturing stationers and envelope manufacturers are only moderately busy and in some cases business is distinctly dull with them.

In paper trade circles generally it is agreed that business is being seriously hampered by the uncertainty which prevails in connection with the coming into effect on January 1st of the new sales tax arrangements and its likely effect on the paper trade. Undoubtedly buying has been considerably curtailed as the result of unsettled conditions creeated by the endless discussions, delegations to Ottawa, changes in the regulations and the various interpretations handed out and the paper trade will be mighty glad when the matter is finally disposed of and unalterable regulations brought into being. Some of the paper dealers take the view that the proposed six per cent. tax in its proposed form is impracticable and that, whereas it has been sought to simplify matters, it will serve to introduce annoying intricacies. That it will enforce the necessity of costly book-keeping to keep trace of the various movements of goods in order that the confusing provision for refunds on behalf of various distinct groups of interests involved seems apparent. There is the licensed manufacturer and the wholesaler, the unlicensed manufacturer and wholesaler, the retailer who sells direct to the consumer and the retailer who manufactures a portion of the goods which he passes on to the public — all will have to be properly checked up and recorded. As it is, the paper trade is awaiting enlightenment on many vague points, and pending adjustments the trade is adopting a waiting attitude, while general business suffers. In some quarters the rescinding of the act in its entirety is being openly advocated and the levying of a turnover tax in its stead is being urged.

PULP. — Conditions in the pulp market remain unchanged. The average concern manufacturing chemical pulps appears to be making just what can be disposed of although the groundwood mills are running full, and as is usual at this time of year, are piling up stock for future sales. The demand for groundwood is fair for current use but none of the consuming firms are stocking up, nor will they, until the inventory season and stock-taking is over. None of the mills are buying except for immediate requirements. Goundwood is selling at from $40.00 to $42.00 and there is a slight weakening tendency in the market. Bleached sulphite is quoted at $80.00 with book grade unbleached selling at $65.00 and news grade at $60.00.

RAG AND PAPER STOCKS. — The markets for these lines are gradually improving and prices are slightly on the upgrade in all lines, while tonnages show a scarcity. Dealers report that the board mills are beginning to demand considerably more stock and there is an increased demand for some lines of rags. The market generally for both rag and paper stocks is strengthening.

NEW YORK MARKETS

New York, December 15 (Special Correspondence) —It is nothing unusual for consumers of paper to let down in their buying during the final few days of the year. Most of them are preparing to take inventory and therefore are desirous of keeping stock as low as possible, and such orders as are placed with manufacturers or jobbers are for paper immediately required. That is the condition existing in the market in New York at present. Demand is almost solely against direct wants, and it noticeable that orders seldom call for other than small amounts of paper.

Nevertheless the market is far from dull. Some kinds of paper are feeling the stimulation of demand caused by the retail holiday trade, and there is a steady contract movement of other grades. Paper manufacturers and jobbers themselves are planning to compile inventories within the next several weeks, and consequently are not endeavoring to press buyers to operate against their will although, of course, no one having paper to sell is leaving anything undone in an effort to get business. The price tone in the market is not altogether satisfactory. Most descriptions of paper are holding firm and their tendency is higher if anything, but there are some kinds which are gradually easing off in price, current market activity not being sufficient to sustain quoted values.

One of the developments of the week is a firmer tone in prices of box board. Some mills in the East have advanced board quotations slightly, prices now asked ranging around $47.50 a ton f.o.b. New York for plain chip and $52.50 New York for filled news board and the market seems pointed to higher levels. The reason of this strengthening of values is difficult to ascertain. Manufacturers and dealers generally acknowledge that demand for boards has not expanded excepting possibly in a minor way, and it is true also that a good many mills in this part of the country are planning to shut down over the inventory period to take stocks and make machinery repairs, so that the stiffening of prices was something of a surprise in the trade. It is likely, however, that with waste paper having recently taken a jump and with manufacturers feeling that they were not going to be blessed with any great volume of business over the next several weeks, they put prices up so as to have a wider margin for profit for smaller production operations.

Some mills are still accepting orders for chip board down to $45 a ton New York and for news board at $50 f.o.b. this city, but a majority are holding to the higher rates. Board business has been disappointing this pre-holiday season. Paper box manufacturers have bought in fair volume but not in the tonnage that was anticipated by producers and dealers. It is stated that some consumers are coming into the market and placing orders for January deliveries, inferring that they look for higher prices in the new year.

Newsprint is moving from mills to consuming centres in a consistent manner and in large tonnage. It can be said that publishers are at the crest of their pre-holiday season at the moment, and some large issues are being printed; furthermore circulation of daily newspapers is exceptionally heavy at present because the public is spending its money for Christmas and therefore buys more newspapers than ordinarily to see the advertisements of department stores and other merchants. It has become somewhat of a habit for several of the New York dailies to print announcements that "so and so many columns of advertisements have been omitted because of lack of space." These newspapers are reported increasing their facilities for publishing larger issues, which means that they will need greater quantities of newsprint in the near future provided, of course, the present advertising boom in the daily press keeps up.

Wrapping papers display a soft price tone. The pre-holiday rush for this kind of paper is past, and the in-between season is on, so that consumers are not engaging in much buying. Domestic manufacturers are looking for business and importers are pushing foreign wrapping paper onto the market, and prices tend lower notwithstanding the rather sharp decline recently. No. 1 domestic kraft wrapping is quoted at around 6 cents per pound at the mill, and in some instances at less than this price, while No. 2 domestic kraft is bringing only about 5.25 cents f.o.b. mills.

Book paper is holding in price, insofar as quotations are concerned, but some manufacturers are shading prices, particularly where tonnage orders are involved. Machine finished book is quoted at 6.50 to 6.75 cents a pound f.o.b. New York for the average grade. Tissues have quieted down somewhat but no change in quotations is noted. Bag papers are reported in continued good demand, and producers are well fixed with orders.

GROUND WOOD.—Mechanical pulp appears to have settled down into a steady market position, with demand arising in a more or less consistent manner and with quotations holding their own on maintained levels. Domestic grinders are asking and receiving around $40 per ton f.o.b. pulp mills for spruce ground for prompt shipment. Prices vary a little, depending on the air dry test and the freight to consuming centres, but there is a marked degree of firmness apparent and buyers seem ready to meet the quotations named on such supply of pulp as they need. Producers are said in some cases to be asking higher rates for ground wood for future delivery, reflecting the belief common in the trade that market levels will rise as the winter proceeds. Imported groundwood of Scandinavian origin is selling in New York at about $38 per ton ex dock at this port, and is available in fairly large tonnage on the spot.

CHEMICAL PULP. — The tone of the chemical pulp market is steadily improving. Prices have not as yet assumed an upward trend, but the tendency is much firmer and everyone on the selling side of the trade seems satisfied that bottom market levels have been witnessed for a time. It is still difficult to determine just what actual market prices are. Sales of foreign unbleached sulphite of No. 1 grade at 2.60 and 2.65 cents a pound ex dock New York have been made, yet importers are generally quoting above these figures now, especially if the pulp is for forward shipment from primary sources. Swedish kraft pulp is selling at around 2.60 cents on the dock at New York, foreign bleached sulphite of No. 1 quality at 3.80 to 4.25 cents, of No. 2 grade at 3.75 cents, and foreign easy bleaching sulphite at approximately 3 cents ex dock. Domestic bleached sulphite is quoted at 4 cents a pound at pulp mills for No. 1 grade but producers are accepting orders at less, while unbleached sulphite is quoted at around 2.75 cents, and No. 1 kraft at 2.75 cents f.o.b. pulp mills.

RAGS. — The papermaking rag market exhibits unusual strength for this time of the year. As a general thing rag prices ease off somewhat as the end of the year approaches, but just the opposite is the case at present. Demand is good and values are gradually, though steadily, rising on some grades of rags at least. The strength of the market is based principally on the active call for low grades, which are moving to roofing paper mills in exceptionally large amounts for just this period of the year. New high prices for the current movement have been paid this week on this class of rags. No. 1 roofing stock has sold at 1.80 cents a pound f.o.b. New York, while No. 2 packing has brought 1.40 cents New York. Foreign dark cottons, for similar purposes, have sold at 1.55 cents ex dock New York.

Old blue rags are in steady demand and firm in price. Mills are reported freely paying 2.50 cents a pound, at shipping points for miscellaneous thirds and blues, and repacked stock is fetching 3 to 3.25 cents at dealers' points. Old white rags are firm and in fair call. New cuttings of nearly all kinds are strongly held by dealers who claim they are not getting normal amounts from producing sources. No. 1 white shirt cuttings are quoted at 13 cents per pound and higher f.o.b. New York, blue overall cuttings at 8.50 cents, light silesias at 8.25 cents, washables at 5.50 cents, unbleached muslins at 11.50 cents, and fancy shirt cuttings at 6.25 cents.

A lie has no legs, and cannot stand; but it has wings, and can fly far and wide.

PAPER STOCK. Several of the cheapest grades of waste paper have eased just a little in price this week, and this has been about the only change of note in the market. Folded newspapers are selling at 85 cents a hundred pounds f.o.b. New York, No. 1 mixed paper at 55 to 60 cents, and common paper at 45 cents, with the probabilities favoring buyers getting some supply a trifle below these figures. The better qualities rule fairly steady though demand for them has slackened to some extent. Hard white shavings are quoted at about 3.90 cents a pound f.o.b. New York, on an average; No. 1 soft white shavings at 3 to 3.25 cents, heavy flat magazines at 1.65 to 1.75 cents, ledger stock at 2 cents, old No. 1 kraft paper at 2.20 cents, and No. 1 print manilas at one cent a pound. White blank news is one of the exceptionally strong items and this material is readily selling to paper mills at 2.25 cents per pound New York.

OLD ROPE AND BAGGING. Old rope has weakened somewhat after having been in a strong market position for a considerable period. Leading consuming mills are reported to have let down in their buying, evidently having covered their requirements for a time, which probably explains the down trend in values. No. 1 domestic manila rope is quoted at 6.50 cents a pound f.o.b. New York and No. 1 foreign rope at 6 to 6.25 cents ex dock at this port, with reports stating that mills have bought under these prices in some instances. Old bagging is showing more activity and prices tend to stiffen. Roofing bagging is fetching 90 cents a hundred pounds New York, and No. 1 scrap bagging around 1.25 cents per pound at dealers' shipping points with special packing bringing up to 1.50 cents.

FACTS ABOUT NEWSPRINT

Figures that have recently been compiled indicate that more newsprint paper is used in the United States than in all other countries of the world put together. Consumption per capita in 1922 reached 45 pounds. The circulations of the Sunday newspapers, many of which weigh in the neighborhood of a pound or more, total 20,000,000 copies per edition, and circulations of daily newspapers total 30,000,000 copies. The average daily weighs about half a pound, and one American newspaper came on the other day with a 64 page ordinary issue, which would take one ton of newsprint for every 2,000 copies. These figures are of great interest to Canada, for more than four-fifths of the newsprint paper produced in this country goes to the United States. The present prosperity of the Canadian newsprint mills is based on the growth in the United States consumption of that type of paper. Many Canadian mills export their entire product to the United States. Often the entire production of a mill is consumed by only two or three papers. The Ontario Paper Company, for instance, supplies only two papers. In the case of other mills the product goes all over the United States. Such a mill is the Belgo-Canadian Paper Company which supplies several Canadian newspapers and in addition makes shipments to a score of American papers as far west as Texas and as far south as Florida.

Let a man try faithfully, manfully, to be right; he will grow daily more and more right. Carlyle.

Industrial Items

LINK-BELT ANNOUNCES NEW CRAWLER TREAD PORTABLE LOADER

Capable of cutting a path twenty feet in width, through a pile of material by means of the swiveling feature, is the astonishing claim made for the new crawler thread, power-swiveling, industrial loader recently put on the market by the Link-Belt Company of Philadelphia. It will be exhibited at the Chicago Good Roads Show, the week of January 12th.

This new industrial loader is illustrated by the accompanying photographic reproduction and is known as the "Grizzly". It is the large capacity, heavy duty loader of the Link-Belt group — a sort of 'parent' to the "Cub" portable belt conveyor, which is extensively used in small yards for loading material into trucks, etc.

The new feature of the "Grizzly" loader is the crawler tread. This type of tread has proved eminently successful, and its application to the industrial loader is a distinct improvement because of the frequent necessity for moving such loaders over railroad tracks, rough and broken ground, piles of loose material and up inclines.

While adding the crawler mechanism to the "Grizzly" still another feature was incorporated — that of making the lower base of solid, cast-steel construction. This feature eliminates the numerous rivet and bolt connections and makes for greater durability and rigidity. The lower base, which carries the loading mechanism, pivots on the tread in similar fashion to that employed by the larger and more expensive locomotive cranes.

Tread shoes are of alloy, heat-treated steel, cast in one piece and are attached by a patented design which has proved exceptionally capable of self-cleaning. In the past, it is said, the one fault with mechanisms of this type was their liability to clog with dirt, sand, mud, etc. The Link-Belt self-cleaning tread, as originally applied to the Link-Belt Crawler Crane, has been adapted to the new "Grizzly" which, it is claimed, makes such clogging impossible.

One of the principal features of this loader is its ability to swivel and swing independently of the wheel or tread base. It can back into a pile, dig, swivel and elevate at the same time—or it can do any of these operations independently, — all at the will of the operator.

The steering mechanism of the crawler tread is controlled by a hand wheel, all other operations being controlled by levers which are conveniently located on the operator's platform on the upper swiveling frame.

The capacity of any loader will vary, of course, with the material handled. For the Grizzly, however, a capacity of 45 cubic feet per minute is claimed while handling bituminous coal. About the same rate of speed is given for sand and about 40 cubic feet per minute with 1½ inch and under crushed stone. It is driven by a motor of ample power and of standard design.

It would appear that this apparatus could very readily be equipped with a long chute which would deliver at a distance to Industrial Railway coal buggies and could be made of use in reclaiming coal from a very large pile with a minimum resetting of the railway tracks.

NEW LINE OF VERTICAL BELT DRIVEN VACUUM PUMPS.

A new line of small vertical belt driven vacuum pumps has been brought out by the Canadian Ingersoll Rand Co., Limited, 260 St. James Street, Montreal, Canada. This line of pumps known as Type 15, will pull and maintain vacuums between 28.6 in. and 29.25 in. depending on their size. In addition to the standard belt design each size is built as a self-contained electric motor outfit, using the short belt drive arrangement or driven through pinion and internal gear. The vacuum pump and electric motor of both the short belt and gear driven units are mounted on a metal sub-base, so that they are not dependent on the foundation for correct alignment.

The "Constant-Level" system of lubrication used on the Type 15 vacuum pumps maintains a constant level of oil, which insures the right amount being distributed to all parts. Like in the ordinary splash system, the bottom of the pump base forms an oil reservoir, of sufficient capacity, for the "Constant-Level" system. The amount of oil in this reservoir is determined by high and low level pet cocks. Above the reservoir and directly underneath the connecting rod is a constant level pan, into which the connecting rod dips and distributes just a sufficient quantity of oil for proper lubrication. The constant level pan is replenished with oil from the supply in the crank case by a valveless oil pump operated by an eccentric on the main shaft. Regardless of the amount of oil in the reservoir so long as it is somewhere between the high and low level pet cocks, it is stated, this system will function perfectly.

There are six sizes — the 4in. x 2 in; 5 in. x 3 in; 6 in. x 4 in. and 8 in. x 5 in. single acting pumps; and 10 in. x 5 in. and 12 in. x 6 in. double acting pumps. The 2 in., 3 in., 4 in., and 5 in. stroke single acting pumps are air cooled by means of an annular ring which encircles the cylinder while the 5 in. and 6 in. stroke double acting pumps are cooled by means of circulating water. The type 15 Vacuum Pumps meet the requirements of chemical plants, food product factories, etc., where machines of smaller capacity than the regular straight line and duplex type are desired.

Further details are given in a new 16 pp. bulletin, No. 3-43-C, recently issued by the Company. A copy will be gladly sent on request, to any of our readers.

LINK-BELT COMPANY'S CALENDAR FOR 1924.

Following their established practice of the past several years, Link-Belt Company of Chicago has again issued a calendar for the ensuing year. In general style the 1924 calendar adheres closely to those issued in the past. Sixteen by twenty-four inches in size, each of the twelve sheets contains not only a large monthly calendar, plainly and legibly printed, but also, in smaller size, the months preceding and following.

The illustrations, however, show a marked improvement over the calendars of previous years. They are from the justly celebrated Chicago artist, Jeffery Grant, and while they accurately portray the construction features of the various types of Link-Belt equipment shown, they have an artistic touch unusual to mechanical subjects.

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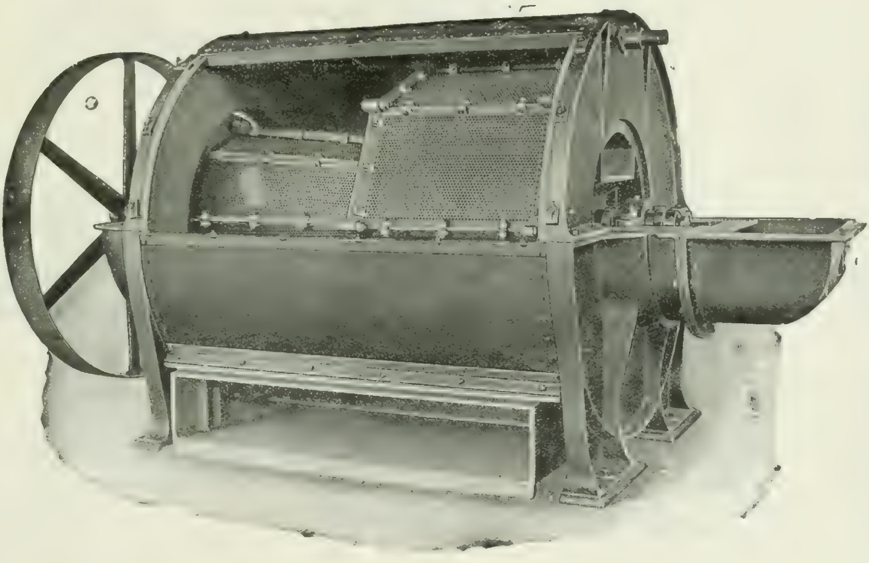

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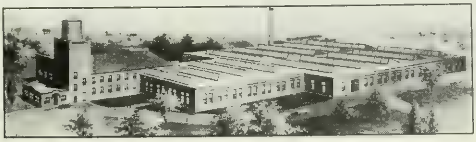

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"St. Lawrence Paper Mills, two, producing 125 tons daily; Belgo Canadian Paper Co., one, producing 85 tons; Fort William Pulp & Paper Co., two, 120 tons, and one at Bathurst, N.B., 50 tons—a total of 380 tons daily.

Two machines are planned for January, 1924, one at Donnacona, 100 tons, and the first of Price Brothers' new units at Kenogami, 100 tons."

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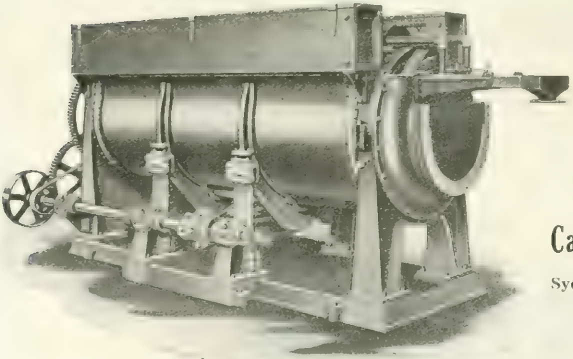

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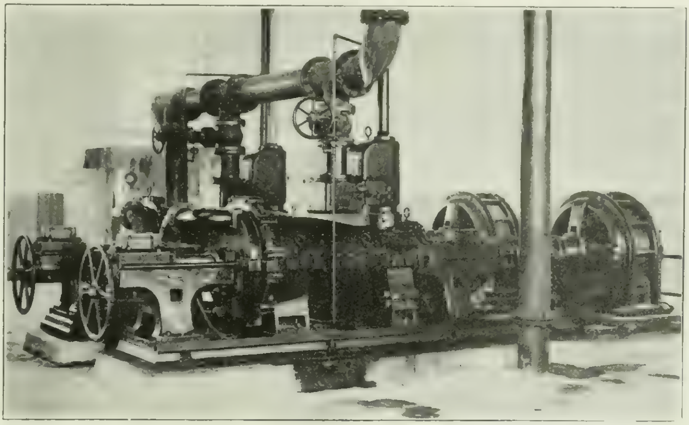

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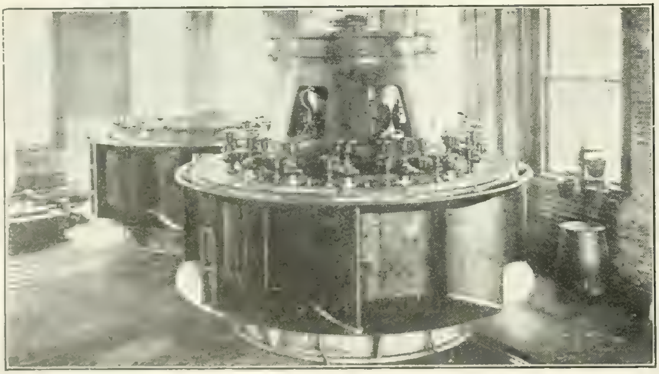

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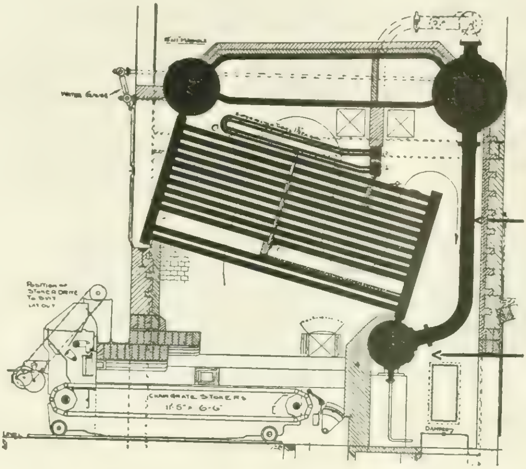

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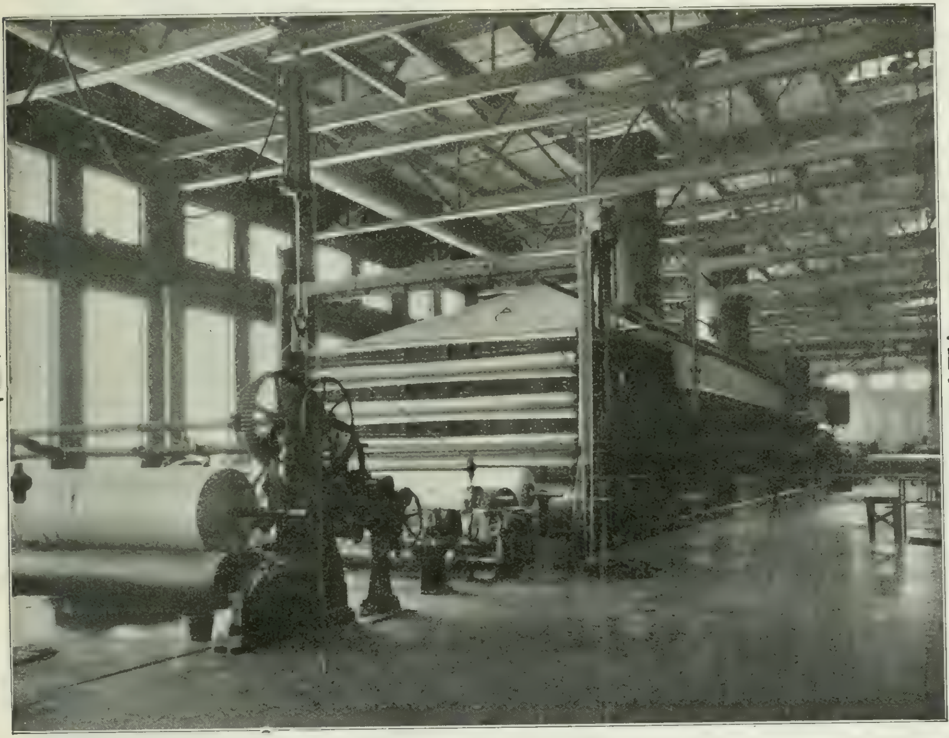

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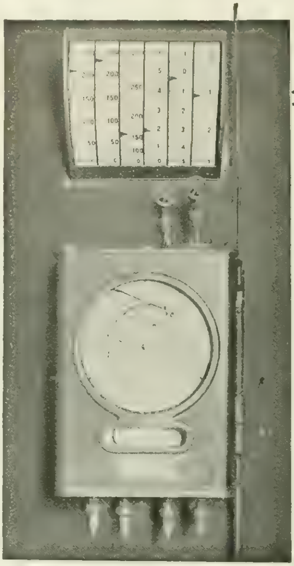

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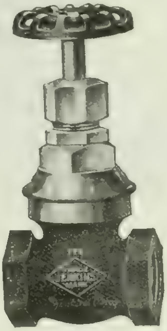

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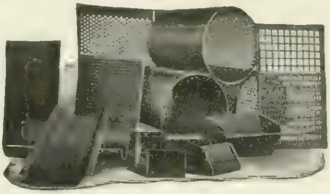

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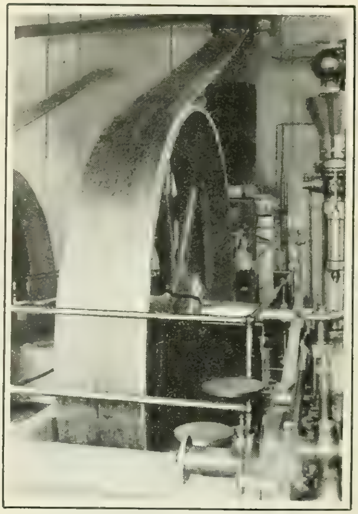

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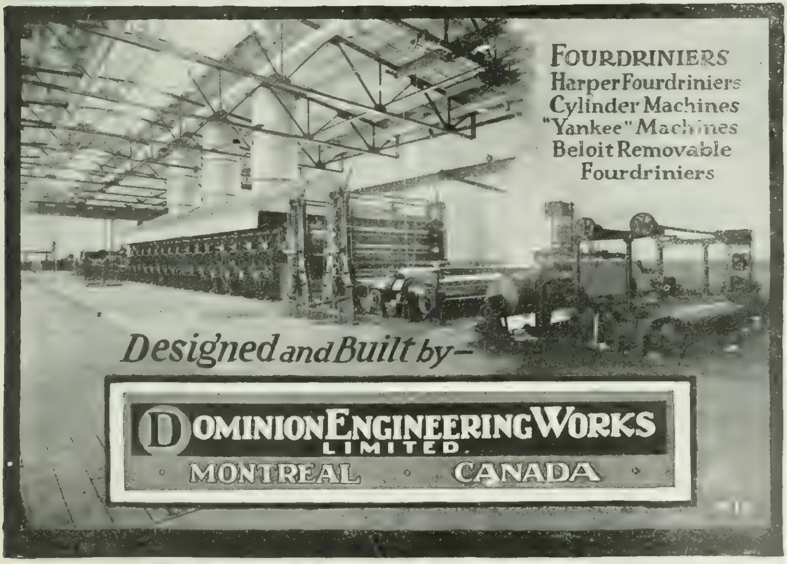

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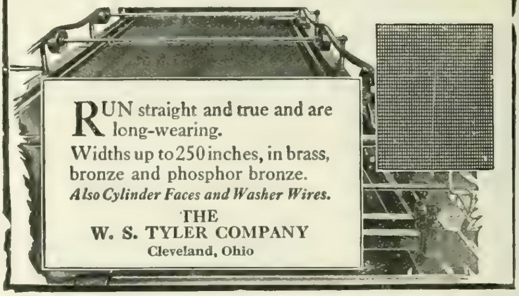

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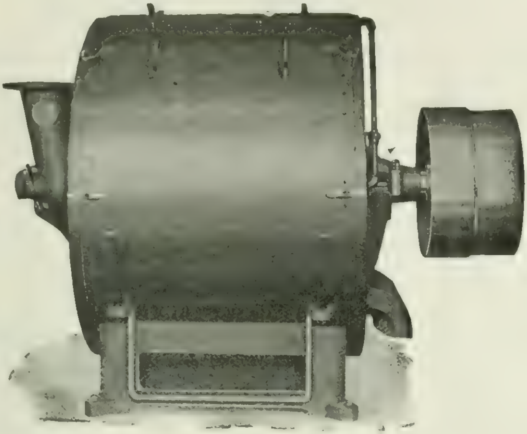

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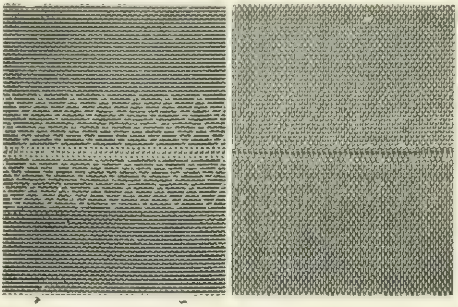

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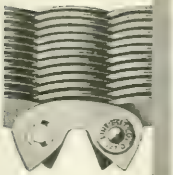

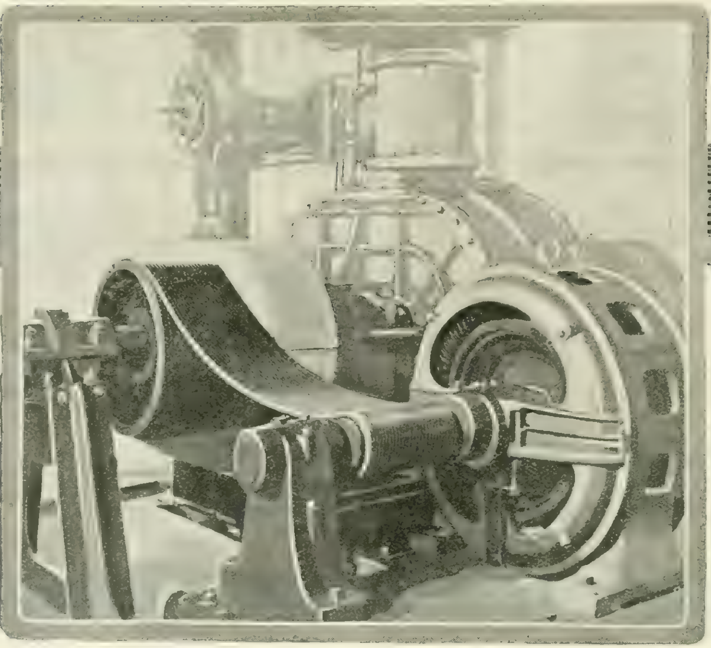

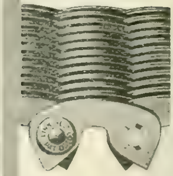

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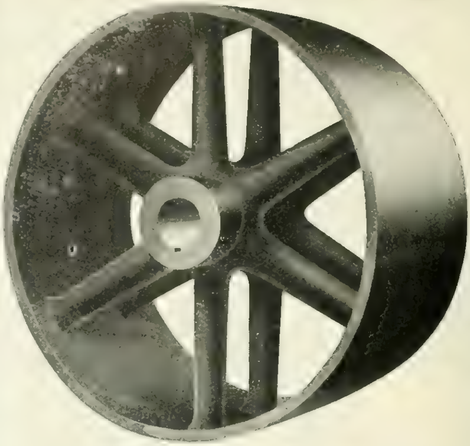

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Pulp and Paper Magazine
OF CANADA

A Weekly Magazine Devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades

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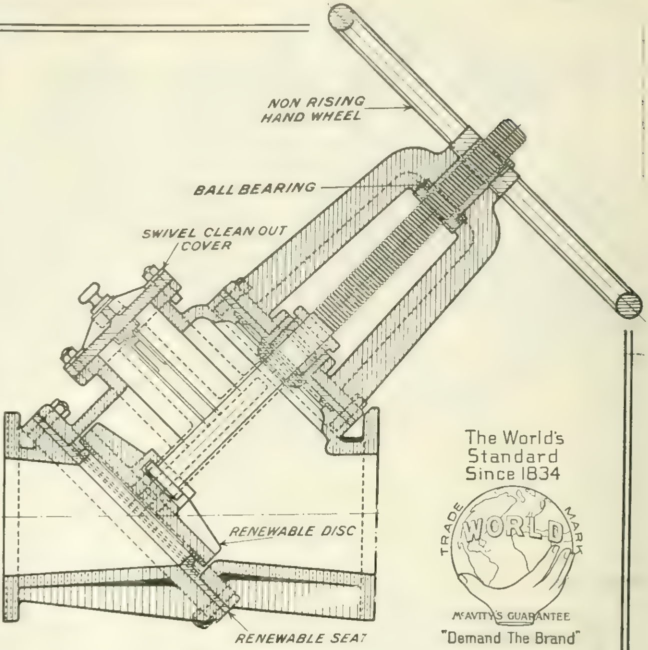

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:-: EDITORIAL :-:

Don't Miss Paper Week, Montreal, Jan. 23-25

"PACK UP YOUR TROUBLES..."

We are at the close of another year, and at such a time it is both natural and usual that the commercial, industrial and financial community should take stock of the country's business position, should weigh up prospects and should attempt to gauge something of what the future has in store.

For ourselves, we are free to admit that circumstances generally might well be more brilliant than they are. Indeed, judging from published statements and the utterances of those who are in positions where they may be expected to know, the manufacturing industries of the country in general, with one or two notable exceptions, are passing through an uncertain stage, the ultimate outcome of which it is difficult to forecast. All sorts of woeful prophets stalk the land, ranging from the type which, because the artificial trade boom of the War years has ceased, is apprehensive of the future, down to the congenital Jeremiah, who, judging from his doleful tale, is convinced that we are all speeding along to inevitable destruction. Go where you will — in shop, warehouse, or factory, even in the club or at a trade function — some pessimistic wail will go up, and unfortunately will produce a chorus of echoes.

Psychologists have often remarked upon the innate disposition of men and women of the British race to cry down their own efforts — and from one point of view, modesty is a commendable national trait — but there are times, particularly when national and individual affairs are not unduly prosperous, when an optimistic note is needed. The industries of this country are certainly in need of such a note at the present juncture, when, owing to the general feeling of uncertainty as to the future, there is such a strong tendency to look upon the gloomy side. In all directions is heard such talk as "the biggest slump for many years"; "this trade or that trade has never been through such a period"; and so on. Hearing some citizens, presumably calling themselves Canadians, dogmatise about trade depression, a listener might be pardoned for imagining that he was in some half-ruined Central European country rather than in a young and growing and virile country.

When Canadian troops made history in the field of France and Flanders they were everlastingly up against seemingly unsurpassable obstacles. Did they falter or sermonise about the insurmountable difficulties? Not a bit of it! They pressed forward, and won out every time. Cannot our commercial, financial and industrial leaders cultivate a little of the same spirit? This magazine believes they can and will, and is prepared to do all that lies in its power to develop and foster the spirit of optimism which should inspire such leaders. Perhaps the boom times of five years ago will never come again; perhaps we have lost such-and-such a market. If so, there will be compensations. Trade conditions will assuredly adjust themselves; other markets will be found; additional avenues will open up as the necessity for them arises. It is useless to endeavour to lay down concrete plans of action to deal with a phase of industry which is daily changing, but by cultivating a cheerful exterior and abandoning the role of the "grouch", we can all do something to keep for the industry, the commerce and the finance of Canada the proud position they have justly won.

Make 1924 a good year.

TOO BUSY WITH BUSINESS

Many people are so busy with their business that they miss the joy of life. And this applies to the man who merely works quite as much as to the man who mostly thinks and plans the work of many. In fact, the monotonousness of work is doubtless principally due to a lack of capacity for thinking about much of anything else. This, in turn, is due to the inability to think at all, seriously. It takes courage to think and it takes will power to absorb, or to deliberately develop, fundamental ideas to think out. Anyone may see how difficult it is to think by just trying to conceive a new thought, or to follow to its furthest ramifications, the application of some apparently plausible statement or scheme, selected from the many to be found in any newspaper.

One can get much satisfaction from thinking about one's business; in fact, our work becomes very uninteresting and boresome if we do not at least master enough of the fundamental principles of it to understand the factors that make or threaten its success. But there is more to life than merely making a living And the mind of a man does not become the vitalizing factor in a contented life, if its concepts are only those of the materials and machines that it directs the hands to utilize. The season of Christmas and New Year suggests the kind of thoughts that are most productive of contentment. By contentment we mean the attitude toward life that comes from feeling that we are contributing something to the well-being of our fellowmen. The desire to make some such contribution, to have thoughts of others is, we believe, due to the growth of the fundamental religious instinct that is in each of us, and which has been directed outside of ourselves by the example and teaching of Jesus. This is the real spirit of Christmas, and, with the coming of the new year, we shall do well to think a bit about the principles that are as old as man, but which were most effectively interpreted by the Christ whose birthday we have just celebrated. It was He who taught that man does not live unto himself alone, and who both lived and gave his life for others. History, biography, and experience show that the satisfying and satisfied life is the one that directs some of its energies outside of itself. The rose puts far more substances into root, branch, and leaf than into the delicate petals of its flower, yet it is the beauty of its bloom and the fragrance of its perfume that endear the flowers to us, and their joyous songs that make us love the birds. It is giving the things we don't have to give that marks a person's real value and that increases the joy of life. We need not be discouraged if our gifts are small. We all rejoice in the roses, but who wants spring without a violet?

So our New Year message and wish is that we may carry the spirit of Christmas 1923, over into the weeks and months of 1924, and add to our own satisfaction and the joy of others by using some of our energies for some things besides the demands of business or work. Let us not be too busy with business.

THE IMPERIAL ECONOMIC CONFERENCE

The official report of the resolutions passed by the Imperial Economic Conference, represents the painstaking efforts made by that body to review the whole field of Empire trade, communications and allied subjects. Public interest will centre largely on the resolutions bearing on Empire trade and development. The preference concessions given by the British Government, and already announced in the press, cover dried and other fruit, fruit juices, sugar, tobacco, wine, canned salmon and honey. That these concessions do not satisfy the more extreme demands of some of the Dominions goes without saying, though they are probably regarded by most of them as a sufficiently good beginning, considering the position of the British Government in regard to its pledges. Now that the Conservatives have failed to be returned it is probable, however, that the whole field will have to be reviewed again in regard to these preference concessions.

An important resolution is that which endorses the offer made by the Imperial Government to render financial assistance towards Imperial development. Briefly, the Imperial Government's offer is that "in order to facilitate the anticipation of works which would otherwise not be taken in hand for some years, they should give a contribution towards the interest charges on loans raised for capital expenditure of this kind by public utility undertakings (viz., communications, power, lighting, water, drainage, irrigation, etc.). These undertakings may be under public or private control. The assistance will be in respect of expenditure or orders placed in Great Britain, and will be applicable only to schemes approved by the Dominion or Central Government concerned and certified by it to be in anticipation of normal expenditure. It is suggested that the maximum grant should be three-quarters of the interest charges for a period of five years." Such grants of public funds are open to serious criticism, and not improbably it will have the effect of encouraging "wild cat" schemes. Moreover, it will become harder in all lands to fight the socialistic menace if there are no bounds to be set to the incursions of government into domains which should be properly reserved for private initiative.

Another resolution deals with Empire trade statistics. An endeavor is to be made to render these as valuable as possible from the point of view of Imperial trade, and the United Kingdom Board of Trade is to review the whole field from that standpoint.

The subject of Imperial communications occupied much of the time of the Conference. With regard to the Rules relating to Bills of Lading there is a good prospect of international agreement in regard to bills of lading on this basis which would be of benefit to every part of the Empire, and considers that these Rules can be recommended for adoption by the various Parliaments of the Empire.

Action has already been taken in many parts of the Empire to carry into effect the proposal contained in Resolution XXV of the Imperial Conference, 1911, with regard to mutual arrangements with a view to the reciprocal enforcement of judgments, including arbitration awards. Progress in this direction is unfortunately impeded by the difficulties experienced by Central and State Governments in arriving at a common policy, although the Conference records its view that an universal arrangement would be of the greatest benefit.

On the subject of Empire currency and exchange the Imperial Conference expressed the view that it is unnecessary to adopt complicated plans for a new instrument of credit, such as Empire currency bills. Where difficulties have arisen in regard to exchange it is considered that the position could be ameliorated if the note-issuing authorities were to accumulate sterling assets and to undertake to exchange their local currencies for sterling and vice versa.

Newfoundland Conifers And Their Properties

By FREDERICK BARNES
Belgo Canadian Paper Co. Ltd., Shawinigan Falls, P.Q.

The report given below is published by the courtesy of Mr. John Stadler, general manager of the Newfoundland Power & Paper Co., Corner Brook, Newfoundland, and was incorporated in a report made to the sponsors of the new company, namely, the governments of Great Britain and Newfoundland and Messrs. Armstrong, Whitworth Co. The object of the work was to obtain a quick, and at the same time a fair idea of the qualities of the various types of pulp woods growing on the West Coast of Newfoundland. The whole of the work was carried out personally by the writer and was compressed into less than 12 days, so that the work had to be necessarily somewhat rushed, but nevertheless it is felt that most of the figures given are very fairly accurate. Special care was devoted to Table No. 1 in estimations of resinous matters, bone dry weight per cubic foot, etc, etc.

It is hoped that anyone reading this report will not be too critical as to figures given or conclusions drawn, for, as indicated above, the work was necessarily rushed and possibly the conclusions drawn are a bit sketchy.

The figures given will possibly be of some interest to the paper trade in Eastern Canada, as tending to show the differences between woods grown in the milder and moister climate of western Newfoundland and those grown in the dryer and colder climate of the mainland.

The figures given for the sulfite tests are of course a bit questionable but the work was done under very difficult conditions and any way the real object of cooking, was not to obtain percentage yields but to obtain samples of cellulose for examination and to observe the variation in reaction, colors of liquors, etc., in the glass tubes.

The ground wood tests were made on a small laboratory hand driven grinder designed by the writer using a six inch pulp stone, fitted with a screw driven pressure pocket, hot water jet, etc.

A sketch of this small grinder is given below. This small apparatus gave a great deal of useful information as to the probable results of grinding the various woods under commercial conditions and such a type of small grinder, it is felt, can be recommended for laboratory use.

Newfoundland Pulp Woods

Samples were cut in January 1923 in the vicinity of the River Humber on the West Coast of Newfoundland. An investigation into the physical and chemical properties of the samples, to determine their suitability or otherwise for use as raw material in the manufacture of Ground Wood Pulp, Sulphite Pulp and Newsprint.

Wood Samples as received, consisted of nineteen sections cut from the same number of different trees. These were complete, with entire bark attached and undamaged, also evidently in practically the same condition as regards moisture content, as when the samples were cut from the trees. The first eight samples were marked "White Spruce", but a superficial examination of these shows that Nos. 1-5 have a totally different bark and quite different appearance to Nos. 6, 7 and 8 which are apparently true White Spruce.

Not only are the physical characteristics quite different to true White Spruce, but the smell of the five samples is of a sour nature and quite different to the typical Spruce smell. In addition, the moisture con-

TABLE I

No. of Sample	MARKED	APPARENTLY.	Diameter inside bark-inches	Yrs Age of Tree	NO. Yearly rings per inch.	% Water	% Bone Dry Wood	Lbs. per cu. ft. Bone dry Wood	% Ether extracted Rosin	% Alcohol xtracted Rosin	% Total Resinous Matter (Pitch)
1.	White Spruce	Bastard Spruce	3.75	25	6.66	63.0	37.0	25.38		....	....
2.	" "	" "	3.875	29	7.48	60.2	39.8	26.11	0.20	0.34	0.54
3.	" "	" "	5.25	28	5.33	61.1	38.9	20.07	..	. .	. .
4.	" "	" "	5.675	42	7.46	57.1	42.9	21.63	0.48	0.76	1.24
5.	" "	" "	8.50	51	6.00	62.5	37.5	21.26	0.52	0.57	1.09
6.	" "	White Spruce	9.25	88	9.51	49.4	50.6	22.89	....	....	
7.	" "	" "	9.50	100	11.11	44.8	55.2	22.89	1.05	0.58	1.63
8.	" "	" "	11.50	97	8.43	38.0	62.0	24.37	. . .	....	....
					7.75	60.8		23.07	0.56	0.56	1.12
						44.1					
11.	Black Spruce	Bl. Spr. Typical	4.25	61	14.35	44.9	55.1	26.75			
12.	" "	" " "	4.75	153	32.21	32.0	68.0	37.33	....	....	
13.	" "	Bastard Spruce	5.625	48	8.53	40.6	59.4	32.25	....	. .	....
14.	" "	Black Spruce	5.75	89	15.48	44.9	55.1	31.00	....	. .	. . .
15.	" "	" "	6.75	76	11.26	40.6	59.4	29.17	....	....	. .
16.	" "	Black Spruce Prob.	10.25	95	9.27	37.1	62.9	24.57	. .	....	....
17.	" "	" " "	11.125	100	8.91	42.7	57.3	23.43	0.37	0.42	0.79
18	" "	" " Typic.	5.50	109	19.87	41.0	59.0	27.30	. . .	....	....
					14.98	40.45		28.97	0.37	0.42	0.79
21.	Balsam Fir	Balsam Typic.	9.25	90	9.73	57.50	42.5	18.25	....	....	....
22.	" "	" "	9.125	95	10.41	42.4	57.6	21.66	0.44	0.82	1.26
23.	" "	" "	9.25	80	8.68	46.4	53.6	24.31		. . .	....
					9.61	48.8		21.41	0.44	0.82	1.26

tent of Nos. 1-5 is very much higher than in any of the other samples and the weight of dry wood per cubic foot is also away low. Further, the microscopical details of the Sulphite cooked fibres are substantially different to those of either spruce or Balsam and generally indicate a true bastard or false species.

Nos. 11-18 are more or less typical Black Spruce with the exception of No. 13 which shows much the same bark and physical appearances as Nos. 1-5 and is probably a bastard tree.

Table No. 1. As regards the White Spruce samples (Nos. 1-8) it is necessary to divide columns 7 and 8 into two parts due to the wide difference in moisture content. Nos. 1-5 give 60.8 per cent. total water while Nos. 6-8 only give 44.1 per cent. The Black Spruce moisture figures are uniform (relatively) while the Balsam figures are rather erratic.

The figures in Col. 9 are not very uniform, but this variation is a matter of common knowledge among men who have made these determination on coniferous woods.

The lack of uniformity has no special significance and is simply due to the great variation in density of the yearly growth in any particular samples of trees:

In Table No. 2 it will be seen that the Newfoundland Black Spruce is substantially heavier per dry cubic foot than mainland B. Spruce namely 4¾ lbs. heavier than the St. Maurice sample and 5¼ lbs. heavier than average Black Spruce.

The Balsam is substantially the same as mainland. Timber per cu. ft. The three samples of apparently genuine White Spruce from Newfoundland are 2¾ lbs. lighter in weight per foot than average mainland W. Spruce.

Samples 1 and 2 approximate to the mainland figures, while the samples 3, 4 and 5 of undoubtedly False or Bastard Spruce show figures about equal to Balsam figures.

Table No. 3 clearly shows that on the whole the Newfoundland Woods contain less pitchy matter than the average mainland woods. The Newfoundland woods average 1.06 per cent. while the mainland woods average 1.23 per cent. Sample No. 22 Balsam has just about one half the pitch content of the St. Maurice and Abitibi Balsams. The Black and White Spruce are much the same as mainland spruces in respect to Pitch. Evidently from these results, less trouble is to be expected from Newfoundland Wood than from mainland wood in regard to pitch.

Pulping Qualities

A large number of experiments have been carried out in converting the various samples into both Ground Wood and Sulphite Pulps.

The Sulphite cooking tests were made in sealed glass tubes in the well known way, several samples being cooked at the same time, so that comparative results could be readily obtained and the colours of the liquor readily seen.

Unfortunately, due to lack of time, high temperatures and pressures had to be used causing frequent bursting of tubes and much loss of time and in most of the cases it was not possible to carry the cooks to a sufficient limit to get accurate percentage yields of pulp. Notwithstanding, much valuable information was yielded or indicated, as to the probable action of the woods under commercial cooking conditions.

Sulphite Pulping Tests

These figures indicate that all of the samples tested will give a decidedly better yield of pulp than is obtained in practice on the mainland pulp woods. Also the length of fibre and colour of the pulps seem to be decidedly superior to Quebec Sulphite pulps. No. 11 Black Spruce was a well cooked sample, yet gave the high yield of 52.5 per cent. of bone dry fibre. Nos. 5 and 7 after making liberal allowance for partially cooked screenings, give very high figures for yield.

The whole of these woods seem to be material of more than ordinary worth as raw material for Sulphite pulp manufacture and in practice a high grade product ought to be turned out, both as regards length of fibre, colour and yield.

The variations in the cooking conditions required, however, for the different species of woods examined, point to the vital necessity of separating the different classes of woods and certainly not cooking them together, as the time of cooking required, colour of liquor, etc., vary very widely with the different samples examined.

Special note may be made of the "Bastard Spruce." This wood gives a somewhat shorter fibre than the Balsam or Spruces and gives a very pale liquor, but the colour of stock is excellent and the quality of fibre very good.

A special point is that the Bastard Spruces, Balsams and White Spruces due probably to their low density, absorb an unusual amount of cooking liquor and it would appear that forcing the cooking acid into the chips would have to be resorted to in practice, under pressure.

TABLE II

NAME	DISTRICT	Nos. of Samples	Weight Bone Dry Per Cu.Ft.	Tested By
Bastard Spruce	Newfoundland	1 & 2	25.75	F. B.
" "	"	3, 4 & 5	21.00	F. B.
White Spruce. .	"	6, 7 & 8	23.38	F B
			23.07	
White Spruce.	[illegible]	. . . .	26.4	F. B.
" "	Canada & U. S. A. (Averages)	. . . .	26.2	Many Authorities
Black Spruce. . .	Newfoundland	11 - 18	28.97	F. B.
" "	St. Maurice Valley		24.25	F. B.
" "	Canada & U. S. A. (Averages)		23.70	Many Authorities
Balsam Fir . .	Newfoundland	21 22 23	21.41	F. B.
" "	Canada & U. S. A. (Averages)		21.10	Many Authorities

TABLE III

Rosin or "Pitch" Contents

WOOD	Age	Inches Diam Of Tree	% Ether Rosin Extract	% Alcohol Rosin Extract	% Total Resinous Matter or Pitch	Tested by	REMARKS.
No. 2 Bastard Spruce........	29	3.875	0.20	0.34	0.54	F B	Newfoundland
No. 4. Bastard Spruce.....	42	5 625	0.48	0.76	1.24	F. B.	"
No. 5 Bastard Spruce.....	51	8 50	0.52	0.57	1.09	F. B	"
No. 7 White Spruce.......	100	9 00	1.05	0 58	1.63	F. B.	"
			0.56	0.56	1.12		
No. 16. Black Spruce.......	95	10.25	0.37	0 42	0.79	F. B.	"
No. 22 Balsam	95	9.125	0.44	0.82	1.26	F. B.	"
White Spruce............	....	12	0.40	0 36	0.76	F. B.	St. Maurice Valley
" "	111	....	0.52	0.47	0 99	Johnsen & Hovey	..........?
Balsam Spruce............	....	7½	0.24	0.36	0.60	F. B.	St. Maurice Valley
" "	....	8	....	1.40	...	F. B.	Sturgeon Falls Ontario
" "	109	...	0.32	0.37	0.69	Johnsen & Hovey	................?
Balsam Fir.............	46	0	1.20	1.35	2.55	F. B.	Green Wood St. Maurice Valley
" ".............	....	4 25	0.87	1.71	2.58	F. B	Abitibi Wood
" ".............	....	9	....	1.42	...	F. B.	Sturgeon Falls Ontario
" ".............	51	...	0.48	0.94	1.42	Johnsen & Hovey	...........?
Spruce.................	....	...	0.03	....	....	F. B.	Lac St. Jean. Quebec
"	....	..	0.33	....	....	F. B.	North Shore, P. Q.
Norway Spruce..........	....	...	7...	....	....	F. B.	Ringerike Norway.

TABLE IV

Sulphite — Pulping Tests.

No.	Wood	Gross Yield of Bone Dry Fibre & Screenings	Condition of Cook	Colour of stock	Amount Screenings	Length & Grade of Fibres
5	Bastard Spruce	70.3 %	Mod. Cooked	Excellent	High	3 m.m. Very good
7	White Spruce..............	63.7 %	Fairly well cooked	Average Colour	Very Moderate	Excellent
11	Black Spruce..................	52.5 %	Thoroughly cooked	Excellent	None	3½-4 m.m. Very long stock
16	Black Spruce..................	59 2 %	Not very well cooked	Not good	High	Very long 4 m.m. stock
22	Balsam........................	55.5 %	Well cooked	Excellent	Small	Very long 4 m.m. stock

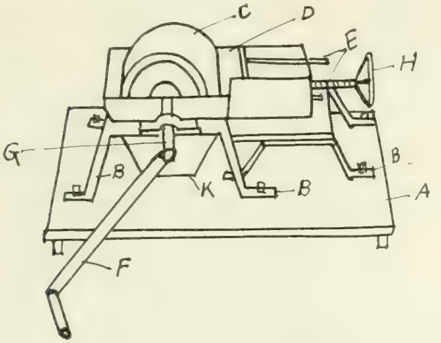
TABLE V

Wood Grinding Tests.

Sample No.	Wood	Quick grown or slow grown size of rings.	Ease of grinding relative	Colour of stock	Unscreened Pulp Micro: Features	Screened Pulp Micro: features	Remarks
2.	Bastard Spruce	Rel. large rings for small tree	Hard	Dark — Rel. Poor	60% large aggregates 40% good fibre stock	Mass of fine stock-l. m. m. av. Length plus short aggregates	Very Fair Fibre
5.	Bastard Spruce.	Rel. large rings	Soft & easy big product	Very White color	Mainly lg. aggregates some long fibres	Mainly l-m.m. stock plus cons. flour and short stock	Moderate Stock
7.	White Spruce	Narrow and semi-broad mixed	Soft & easy big product	Average G. W. color	Very long aggregates plus medium stock	Mainly l-m.m. stock plus some better stock	Moderate much the same as No. 5
8.	White Spruce.	Mod. Broad rings	Soft & easy big production	Good color	A mass of long & medium aggregates	Little or none	Very poor
12.	Black Spruce.	Very slow grown very fine rings	Hard	Good	50% long aggregates 50% long fine stock	Uniform mass of 1½ m.m. fine fibres	Excellent Pulp
16.	Black Spruce.	Quick grown Broad rings	Medium	Good	95% long-medium aggregates	A little only	Rel: very poor
17.	Black Spruce.	Medium Width Rings	Medium	Average G. W.	80% long coarse aggregates 20% good fibres	Rather uniform mass of 1½ m.m. stock a few agg.	Good Stock
22.	Balsam	Rather narrow	Mod. Hard	Very Good	Thin aggregates good quantity of good fibres	Short stock flour & sh. aggregates	Good Stock when suitably treated
23.	Balsam	Rather narrow	Rel. soft big production	Very Good	Very long aggregates good amount of long fibres	Short stock flour & short aggregates	Good stock if suitably treated

small amounts of pulp ground in each case, the surface of the stone was not jigged again, but remained about the same in all tests. A few grams of wood were ground from each sample under as near as possible exactly similar conditions, as to surface of stone, temperature, pressure and speed.

The samples were at once examined microscopically and differences noted.



EXPERIMENTAL GRINDER

A. Heavy ½ inch steel plate, 10 x 16 inches; B. Heavy angle-iron supports; C. Grindstone, 6 inches diameter; D. Pressure pocket. E. Guides for pressure foot; F. 9-inch crank, with handle; G. ¾ inch steel rod; H. Hand wheel and screw for pressing wood against stone; K. Receptacle for ground wood.

Wood Grinding Tests

The above figures in Table 5, give some indication as to the way the various woods will grind in practice. In colour of product No. 5 gave an unusually White Pulp closely followed by the Balsam pulps 22 and 23 and also by No. 8. Numbers 12 and 16 were slightly more yellow in tint, while Nos. 7, 17 and 2 were all very much lower in colour but at the same time, of a good commercial tint for groundwood.

Most of the samples seem to be easier to grind and to give a greater gross production of unscreened pulp per horsepower than do the mainland woods. This is to be expected, due to the less average density of the Newfoundland woods, except Black Spruce.

The details about the Unscreened pulps give a fair indication as to what may be expected in practice. The varying proportions of fibre aggregates torn away from the samples show clearly how the woods vary in grinding qualities.

It is evident from the above results that an attempt to grind a mixture of these woods would result in very poor pulp indeed and that as in the case of sulphite cooking, it would clearly be necessary to segregate the various kinds of pulp woods and grind separately in order to get good results.

Summary

It seems evident that in practice these Newfoundland Woods will give:

For Sulphite Pulps (1) Higher yields than mainland timbers per unit of weight (dry).
(2) Longer fibre and better colour.
For Groundwood Pulps (1) Greater gross prod. per P. than mainland woods.
(2) Greater ease of grinding.
(3) Quality-indefinite, but undoubtedly good, thought most probably not quite up to mainland product on the average.

GUARDS IMPORTANT IN ACCIDENT PREVENTION

"I wouldn't be alive today if it hadn't been for that guard." said Foreman Bill to the Big Chief, as they looked at the swiftly revolving fly wheel enclosed by a stout wire cage. "I was standing right in this very spot when a circuit breaker blew out over on the board. I started for it quick, slipped on a small spot of oil and landed up against that guard. Lucky for me it was there."

One might say, "Well, Bill should have watched his step. What was that oil doing there anyway? A man can't be too careful around dangerous machinery." But the fact still remains — Bill slipped and the guard saved his life.

Next to a careful man the best safety device in the world is a good guard. We can put guards on machinery but we can't put guards on men's brains. We generally know what a machine will do but we can never accurately determine what tricks our minds will play on us to cause trouble. And that's why certain gears, belts, and other equipment in the plant generally must be covered up.

If we were as sure what we will do tomorrow as we are what the machines in the plant will do, we could throw away a large number of the safeguards now being used. There's the trouble! We don't know what moment some careless act or thought on our part will result in an accident.

Man suffered few accidents from the hand operated jack knife, saw and hatchet, but when he created machines to cut wood, iron and steel he had to protect himself from them. Many a man has taken off a guard saying, "that's the bunk," and has gone on working—and probably he has gotten away with it. But in the files of the National Safety Council are accounts of hundreds of accidents which happened because the guard was taken off, goggles thrown aside, gloves discarded, or some other safeguard ignored. On the other hand there are also on record numberless instances where accidents have been averted by means of guards.

The safeguards in our plants, in our power houses, in our streets, at our crossings are intended to save lives, limbs and misery — they have a humane purpose we cannot afford to overlook. And no person has reason to believe that he can go through life and neglect these safeguards which have been developed for his protection.

It is never in ease or luxury, with freedom from sense of need and care, that the world's best and strongest helpers are trained.

Sales Tax Effective 1st January, 1924

Text of Regulations Issued by the Department of Customs and Excise Becoming Effective January 1st, 1924

The following regulations are hereby established, under authority of Section 19C of The Special War Revenue Act, 1915:

1.—Licenses

(a) The annual fee for a license required under this Act shall be $2, payable on the 1st day of April in each fiscal year.

(b) The Collector of Customs and Excise of the Port where the Head Office of a licensee is situated may, upon application therefor, issue certified copies of the license for the branches situated in other Ports. Such certified copies shall be forwarded by the Collector of Customs and Excise at the Port where the license was issued to the Collector at the Port where the branch is situated, there to be recorded and delivered by him to the branch office of the firm.

(c) Every licensed manufacturer or licensed wholesaler, when purchasing or importing goods for further manufacture or for resale, shall quote his license number and certify on the order or entry that such goods are for resale.

(d) Licensees shall not quote their license number nor give a certificate as above when purchasing or importing plant equipment, articles or goods for their own use and not for resale.

Licensed manufacturers shall not quote their license number nor give a certificate as above when purchasing or importing goods to be used in, wrought into or attached to articles specified as exempt from the Consumption or Sales Tax.

2.—Returns and Payment of Tax

(a) Every one subject to license under Section 19-BBB of The Special War Revenue Act, shall make a monthly return showing the total amount of his taxable sales, and the tax payable thereon.

(b) Each return shall be delivered to the Collector of Customs and Excise and the amount of the tax paid to him on or before the last day of the month next succeeding the month covered by the return.

(c) The monthly return shall be made on a form prescribed by the Commissioner of Customs and Excise and shall be sworn to before a proper Officer of Customs, Justice of the Peace or Commissioner for taking affidavits. Certificates in the following prescribed form from Chartered Accountants or independent Auditors, endorsed on the face of the return, may be accepted in lieu of the declaration of the licensee; and a person, firm or corporation located at a point where no Officer of Customs and Excise is situated may, if the return is for an amount of $10 or under, likewise endorse on the face thereof a certificate in the following terms in lieu of the statutory declaration:—

> "I,......................, do hereby certify that the above amount truly represents all the tax accrued upon sales of merchandise, as imposed by law."

(d) Returns shall be delivered to the Collector or Sub-Collector of Customs and Excise at the Port or Outport where the license is located.

(e) Persons, firms or corporations operating with Offices or Branches in more than one locality may if they so desire, make one return, to be filed by the Head Office covering the entire business of the firm.

(f) Returns delivered to Ports shall be in triplicate and to Outports in quadruplicate. A copy of the return is to be stamped by the Cashier and returned to the licensee, who shall keep such copy on file for a period of not less than three years; one copy of the return is to be retained at each Port and Outport the original to be forwarded to the Department with the Excise Tax Cash Sheet.

(g) Returns shall be signed by the proprietor or a partner of the business, President, Manager, Secretary or Treasurer, of a company, or by any person duly authorized by Power of Attorney to sign on their behalf. When the return is to be signed by a person other than the proprietor, partner, President, Manager, Secretary or Treasurer, Power of Attorney executed in due form shall be filed with the Collector of Customs and Excise.

(h) The return delivered by a licensed wholesaler shall show the amounts of the non-taxable sales and the taxable sales separately and the amount of the tax payable.

3.—Dominion of Canada Bonds Given as Security Provided for in Section 19-BBB, Subsection 7

When Dominion of Canada Bonds are tendered as security by a licensed wholesaler, they shall be accompanied by a written assignment to the Commissioner of Customs and Excise.

4.—Definition of the Term "Substantial Portion" of Goods

When the portion of goods exempt from the tax exceeds 1-3 of the value of all of the materials used in the manufacture or production of goods as referred to in Subsection 3 of Section 19-BBB, the manufacturer shall take out a license and pay the consumption or sales tax on his sales.

5.—Refunds and Deductions

(a) Licensed manufacturers or wholesalers who desire to make application for deduction of the sales tax paid on materials on hand on the 1st of January, 1924, as provided for in Section 19-BBB, Subsection 8, in respect of goods which have been, are being or are to be used in, wrought into or attached to articles to be manufactured or produced for sale, which articles are subject to sales tax, shall signify their intention of so doing in writing, to the Collector of Customs and Excise on or before the 1st of December, 1923, and shall make an inventory of the goods upon which claim is to be filed.

Such inventory shall show a description of the goods and trade number, if any, and the quantity and value of each kind of goods, such value being the value upon which tax was actually paid. Each item shall be serially numbered. Goods in transit on January 1, 1924, upon which the tax was paid or payable, shall be regarded as goods on hand.

This inventory shall be kept on file in the office of the licensee and shall be subject at all times to examination by the proper officers of the Department of Customs and Excise. A summary thereof shall be prepared showing the quantity and value with sales tax claimed in respect to each class of goods. This summary, certified to as true and correct by an authorized official of the claimant, shall be submitted in duplicate to the Collector of Customs and Excise at the Port in which the business is located, not later than March 31, 1924.

Goods in the hands of licensed manufacturers, producers or licensed wholesalers on the 1st of January, 1924, for resale in the condition in which imported or purchased by them, are to be included in the inventory of such licensed manufacturer, producer or wholesaler. When the goods are sold the invoices therefor shall be marked with a notation that the tax was paid prior to January 1, 1924, and the Collector of Customs and Excise shall be notified and the inventory claim reduced accordingly.

Licensed manufacturers or producers or licensed wholesalers or jobbers who desire the deduction, are required by law to submit their claim for the total amount of the deduction, together with complete evidence, on or before the 30th June, 1924. The claim shall be made in the form prescribed by the Department, viz: Form No. N. 17. The total amount of deduction claimed shall be established to the satisfaction of the Department of Customs and Excise, as not being more than the amount of tax actually paid by the manufacturers or producers, wholesalers or jobbers.

Licensed manufacturers or producers may make deductions on their tax returns for the tax paid before January 1, 1924, on materials used in the manufacture of goods up to the close of the period covered by that return.

The deductions from licensed wholesalers' or jobbers' tax returns may be made as the goods are sold.

(b) When consumption or sales tax has been paid on goods to be used in, wrought into or attached to articles manufactured or produced for sale and which articles are subject to consumption or sales tax, a refund or deduction of the amount of the tax may be made as follows:—

When the claim for deduction or refund is made by a licensed manufacturer or producer it shall be accompanied by—

1. The written consent of the wholesaler, jobber or other dealer;
2. A certified copy of the invoice for the purchase of the goods showing the tax as a separate item;
3. A certificate that the goods are to be used in, wrought into or attached to articles for sale, which articles are subject to consumption or sales tax.

When the claim for deduction or refund is made by a licensed wholesaler or jobber the claim shall be accompanied by—

1. A certified copy of the invoice for the purchase of the goods showing the tax as a separate item;
   A certified copy of the purchase order bearing the certificate of the licensed manufacturer or producer as to use and his license number;
3. Proof of the delivery of the goods in fulfilment of the order.

When the claim for refund is made by an unlicensed wholesaler or jobber or other dealer, it shall be accompanied by a certified copy of the invoice showing the tax as a separate item and—

1. A certified copy of the purchase order bearing the certificate of the licensed wholesaler or jobber that the goods are for resale and his license number;
2. A certified copy of the order bearing the certificate of the manufacturer as to use in manufacture and his license number;
3. Proof of the delivery of the goods in fulfilment of the order.

Claims for deduction shall be made on Form No. N. 18 and Claims for refund on Form N.15.

(c) Claims for refund of the tax paid on domestic goods exported shall be accompanied by a certified copy of Customs Export Entry and proof of payment of the tax. Claims shall not be allowed on goods sold and used for domestic consumption and subsequently exported.

(d) Claims for deduction in respect of goods sold at a price fixed by a bona fide contract of sale made prior to May, 12, 1923, shall be acompanied by a certified copy of the contract of sale. Such claims shall show the date upon which the contract was drawn, the quantity, trade number, value of goods, deductions allowed or applied for in respect of tax paid on raw materials covered by the contract dates and quantities of goods delivered on the contract previous to January 1, 1924, and between the dates of January 1, 1924, and March 31, 1924, inclusive. Claims shall be presented on Form No. N.18 to the Collector of Customs and Excise, with complete evidence attached on or before June 30, 1924.

The total amount of deduction claimed shall be established to the satisfaction of the Department of Customs and Excise, as not being more than the difference between the amount of the sales tax calculated at the rate in force on the eleventh day of May, 1923, and the amount of the consumption or sales tax paid or to be payable on and after January 1, 1924.

The deductions may be made from tax returns of licensees as the goods are sold.

(e) Claims for refund under Section 19-G shall be accompanied by satisfactory evidence of payment of the tax and a certified invoice of the sale to the Provincial Government or department bearing a certificate from an authorized official that the goods are not for resale.

6.—Books and Records

(a) Each licensee shall be furnished with a copy of these Regulations and a notice in writing from the Collector of Customs and Excise that by direction of The Honourable The Minister he is required to keep adequate books and accounts in English or French at his place of business in Canada, for the purposes of this Act.

(b) Such books or accounts shall show the details of every transaction of the licensee and shall be preserved by him available for inspection for a period of two years.

(c) Licensed manufacturers or producers, or licensed wholesalers or jobbers who also conduct a retail branch or branches shall keep separate records for each of their branches and the license of such manufacturers, producers, wholesalers or jobbers shall not be used in connection with purchases or importations by the retail branch or branches.

7.—Computation of Tax

In respect of goods subject to consumption or sales tax sold by retail by the manufacturer or producer thereof in Canada, the value of the goods for purposes of the tax will be determined by the Minister of Customs and Excise in each class of cases.

In respect of goods subject to consumption or sales tax sold or transferred by the manufacturer or producer thereof in Canada, to his own wholesale houses, the value for purposes of the tax shall not be less than the wholesale price.

8.—Returnable Containers

Licensed manufacturers and licensed wholesalers, dealing in goods shipped in returnable packages, may make to the Government, not later than the end of March in each year, an annual consumption or sales tax return as to such packages, instead of monthly returns, and the tax so payable to the Government by the manufacturers shall be paid on the difference between the amount charged for the returnable containers shipped during the year and the equivalent amount rebated for containers returned during the same period.

9.—Returned Goods

Where goods are returned as unsatisfactory or as damaged in transit, and goods of the same value are supplied, in exchange, no charge being made for the goods so supplied, no tax is applicable on the goods supplied in exchange.

Where the articles supplied in exchange for those returned as unsatisfactory or as damaged in transit are of greater value, sales tax is collectible on the difference in value as payable by the purchaser.

Where the goods supplied in exchange for those returned as unsatisfactory or as damaged in transit are of less value, the amount of tax on such difference may be refunded or credited to the purchaser, if the original amount of tax was charged to him or paid by him; or, if in the meantime, the tax has been paid to the Department, credit for the amount of the tax on the difference may be taken by the vendor in his next succeeding tax return.

If goods are returned as unsatisfactory or as damaged in transit, and are not replaced, and further, if the total purchase price is refunded or credited, the vendor may refund or credit the amount of tax collected or charged to the purchaser. If the tax has been paid by the vendor to the Department, credit may be taken in the vendor's next succeeding tax return.

10.—Damaged Goods (Domestic)

When a licensed manufacturer or wholesaler ships taxable goods for which he is required to submit a tax return and if such goods are received in bad condition or are damaged or destroyed in transit, and are not returned to the shipper, the licensee may make a deduction on his tax return for the tax on the amount of the allowance granted by him to the consignee, provided that notice of damage or destruction is given in writing to the local Collector of Customs and Excise within fourteen days. If the licensee desires, he may submit an application for refund of the tax on the allowance for damage or destruction in lieu of taking a deduction on his tax return.

11.—Invoices

(a) Licensed manufacturers and licensed wholesalers when selling to retailers or consumers, shall not show the tax as a separate item on the invoice.

(b) The provision of paragraph (b) Subsection 12, Section 19 BBB, will be deemed to have been complied with if, when the unlicensed wholesaler sells to the licensed manufacturer or licensed wholesaler, he states on his invoice that the price of the goods does not include consumption or sales tax.

Ships' Stores

1. Domestic Spirits, Tobacco, Cigars, Playing Cards and Matches, may be delivered from the place of manufacture, free of Excise Taxes under regulations, as contained in Circular 177C.

2. Imported materials, (as per list contained in Customs Memoranda 1859B and 126C) may be delivered as Ships' Stores from Customs Bond free of Sales Tax, if complying with the regulations, as contained in the said memoranda.

3. Domestic articles, which are consumable stores, and articles included in the following list, viz:—

Biscuits, Chocolate, Cocoa or Cocoa Paste, Mineral Waters, bottled or not.

Oils, viz:—

Fuel Oil, Illuminating Oil, Lubricating Oil, Kerosene or Coal Oil over .725 specific gravity.

Vinegar, Paper Towels,

may be delivered free of Sales Tax, for use as Ships' Stores, to any vessel bound on an ocean voyage to a Port outside of Canada, or to vessels clearing for the deep sea fisheries, seal fisheries, or for delivery to British and Foreign warships, and Telegraph Cable ships, for use on such vessels under the following regulations, viz:—

(a) Such goods, when sent from a place other than that from which the said vessels sail, shall be entered ex-warehouse as in the case of goods for export, the usual bond being taken and the goods consigned to the order of the Collector of Customs and Excise at the Port of exit from Canada.

(b) Such goods shall be delivered to vessels sailing from a Warehousing Port only.

(c) The owner or agent of any such vessel shall give a written guarantee to the Collector of Customs and Excise that such goods shall be used only on such vessel while on the high seas, and shall in no case be relanded in Canada without specific permission of the Department of Customs and Excise being obtained in each case.

(d) The Master, or other duly authorized Officer of the vessel to which such goods are delivered, shall give a receipt in writing, in duplicate, therefor, and such goods shall in all cases be accompanied on board the vessel by an Officer of Customs and Excise and be delivered in his presence to the Master, or other duly authorized Officer.

(e) One copy of such receipt, countersigned by the Customs and Excise Delivery Officer, shall be forwarded by the Collector at the Port of exit to the Collector at the Port from which the goods were shipped in bond, and shall be his authority for the cancellation of the bond.

(f) The quantity of goods so delivered at any one time shall be a reasonable quantity required for a return voyage, of which the Collector of Customs and Excise shall be the judge.

(g) These goods may be constructively warehoused, and warehouse entries passed therefor at the Port of shipment, and these regulations will be deemed to have been complied with when duly completed entries ex-warehouse for ships' stores are returned to the sending Port.

(h) Entry forms B.51 and B.55 are to be used for this purpose.

All previous Regulations issued under Part 4 of The Special War Revenue Act are hereby cancelled effective from January 1st, 1924.

Instructions to Collectors of Customs and Excise Consumption or Sales Tax

1.—Licenses

The Department will issue a new consumption or sales tax license, as required under the amendment to The Special War Revenue Act effective 1st January, next, to replace the sales tax license now in force. This license will be issued only to a manufacturer or a wholesaler who is entitled to a license under the Act as amended.

(Note).—A manufacturer who does not manufacture goods to the extent of $10,000 a year, but who uses a substantial portion of goods which are exempt from the tax in the production of goods liable to the tax is also required to obtain a license.

Sales Tax licenses now in force shall be cancelled on the 1st of January, 1924.

Any person, firm or corporation subject to the provisions of this Act on and after the 1st January, 1924, at present in possession of a sales tax license, is not required to pay a license fee on exchange of the old license for the new license covering the balance of the fiscal year 1923-24.

Any other person, firm or corporation subject to the provisions of this Act on and after the 1st January, 1924, shall pay a fee of fifty cents for the license covering the balance of the fiscal year 1923-24.

All licenses must be renewed on the 1st April, of each fiscal year.

2.—Returns

Manufacturers or producers manufacturing or producing goods for their own use and not for resale are required to account for consumption or sales tax thereon in accordance with the provisions of Section 19-BBB, Subsection 13, paragraph (d). A statement of such goods to be separately shown on their tax returns.

3.—Refunds and Deductions

You will note that the regulations governing refunds and deductions provide that any licensed manufacturer or licensed wholesaler desiring to make application for deduction of tax paid on materials on hand on the 1st January, 1924, shall notify the Collector in writing on or before the 1st day of December, 1923.

You are hereby instructed to furnish the Department promptly, with a statement showing the names and addresses, of manufacturers or wholesalers desiring this deduction, in order that the Department may arrange for the work in connection with the verification of inventories and deductions.

Applications for refunds are to be submitted to the Department in the regular manner. Claims for deductions will be dealt with at the Ports.

4.—Repairs

No tax payable on repairs except in respect of material supplied.

5.—Custom Work

Custom work performed for a licensed manufacturer or a licensed wholesaler is not subject to the tax provided the licensed manufacturer or licensed wholesaler quotes his sales tax license number on the order for such work and certifies thereon that the goods are for resale.

6.—Freight

Consumption or sales tax is not to apply on the charge for freight for transporting a taxable article from a licensed manufacturer or producer to the purchaser, provided the charge is shown as a separate item on the invoice on which the tax is accounted for by the manufacturer or producer.

7.—Computation of Tax

The Regulations provide that in respect of goods subject to consumption or sales tax sold or transferred by the manufacturer or producer thereof in Canada to his own wholesale houses, the value for purposes of the tax shall not be less than the wholesale price. The tax on such goods on hand in the wholesale branches of manufacturers on the 1st January, 1924, shall be included in their inventory as goods on hand at the factory. The tax payable on such goods shall be accounted for on the manufacturer's tax return for the month of January, and subsequent to that date tax on transfers to the warehouses shall be accounted for on or before the last day of the month succeeding the month during which the transfer was made.

8.—General

Immediately upon receipt of these instructions, Collectors of Customs and Excise are required to make a survey of their Ports, in order that they may be in possession of a complete list of persons, firms or corporations conducting a business within their survey which is subject to the provisions of The Special War Revenue Act effective from the 1st January, 1924.

You are instructed to forward to all persons, firms or corporations the following, viz:—

(1) Copy of Office Consolidation of The Special War Revenue Act, 1915, as in force 1st January, 1924;

(2) Copy of regulations and instructions under The Special War Revenue Act, 1915, as amended, dated 15th October, 1923;

(3) Notice to keep books and records;

(4) Chart as to application of tax.

A receipt therefor is to be obtained from each such person, firm or corporation and filed in your office for further reference.

DUTCH ARTIFICIAL SILK EXPORTS INCREASED.

Exports of artificial silk from the Netherlands increased from 516 metric tons in the first nine months of last year to 1,191 metric tons for the same period of 1923, of which 371 metric tons were shipped to the United States. — U. S. Commerce Reports.

Don't Fret About Business--Get it

By WILLIAM R. BASSET

In "Collier's the National Weekly"

Is there anything the matter with business? It is becoming the fashion to treat business as though it were a sick celebrity—then issue bulletins on its condition. Apparently the malady is chronic, for according to the bulletins the patient is never wholly well. He is either gaining too rapidly in strength or relapsing. Is business like a neurasthenic woman, never happy without half a dozen doctors on the premises? Why do we talk so much about the condition of business? Why is it that no chamber of commerce or trade body luncheon is complete without a speech on the condition of business? Here are a few of the things I have been hearing lately. You have been hearing or reading them too:

"Yes, in some lines business appears to be good enough," said the chairman of the board of a fair-sized company to me. "I am not doing so badly myself, but I am afraid of what's ahead."

"What is ahead?" I asked. "What is it that you are afraid of?"

"Well, it is rather hard to say," he answered vaguely, "but I was told by a man very close to one of the biggest fellows in the Street that this was a pretty good time to play close to one's chest."

He was very mysterious. I could get nothing concrete out of him. Another man I met was more positive.

"Things seem to be all right, but they're not," he said. "Wages are too high. Look what the building trades are getting. Think of plasterers at twenty-five dollars a day! And then nobody wants to work more than eight hours. Prices will soon be up in the skies again—and then the smash."

"But do you really think," I asked him, "that wages or prices are too high? Of course here and there workers have forced their wages up pretty high, but still they couldn't get those wages if somebody didn't pay them. When there is a stock-market corner, speculators pay more for stock than they think it is worth. Some times they don't care what they pay. They think they can make their profit by securing control. The building workers happen to have something the contractors are willing to bid for. The owners and the contractors made the market, not the workers. Did you ever turn down anybody because he wanted to give you too much for your goods?"

I am rather fed up on all this talk about high wages in the building trades. I should have no respect for a workman who did not get all he could for his services. The high-wage stuff is getting tiresome.

"My business is better than it has been for a long time. That ought not to worry me, but it does," another man told me. Many others have been saying very much the same thing lately. "I am afraid of a boom. If we have another boom, then we shall have another depression. That is what worries me."

The next man was scientific. He was brimful of the business cycle, the gold reserve, the fiscal state of Europe, and so on. He was immersed in the high dope and he could talk the language too.

"If you will examine the price curve in this country since 1820, and then take all the present factors into consideration and continue the curve into the future as I have done, you will find that prices are bound to go downward for the next ten or fifteen years. Of course our large stock of gold probably will result in a temporary inflation, which will be followed by a severe depression. We may be approaching that inflationary period now. The automobile production, the buying of luxuries by wage earners, the spending of three-quarters of a billion dollars on the movies and other amusements, all indicate that perhaps the inflation has already begun—"

And thus, with all the pseudo-science of business forecasting, he unfolded his tale of woe.

Hand-to-Mouth Buying

Now what does all this mean? I have quoted only a fraction of the talk that is going the rounds. Here and there we find an out-and-out boomer, doing a "bull-on-the-U. S. A." turn.

But, as a plain fact, business is nervous. There can be no doubt of that. This nervousness does not show in the figures. Sales at retail are neither abnormally high nor abnormally low. Most factories are working at fair volume and unemployment is confined largely to those who are finicky about work and wages. But there are few long commitments and most buying is exceedingly careful. Are long commitments necessarily a sign of good business? Manufacturers like to be sold out for six months or a year ahead. But is that good business? Or is it merely gambling on the future? In some lines of trade it has been the custom to buy for the better part of a year ahead.

The manufacturer bets that he can profitably supply the goods at the price agreed on. The buyer bets that he can profitably resell at the price. In the normal course of events, either the manufacturer or the buyer will lose. It is quite certain that their profits will not come out according to schedule—although neither may actually be out of pocket. This is the old-fashioned way of manufacturing and buying, and what is really causing a great deal of the uneasiness to-day is that retailers are learning that buying far ahead is too much like gambling to be included in the program of well-ordered business. This is the reason why, while manufacturers complain of the lack of advance orders, they do not much complain of present business.

Most of the talk of bad business, if you run it down, comes from the industries in which waste is rampant and which therefore cannot put out goods at sufficiently low prices. In every industry some firms are making money, but also in every industry are some who are not making money. That is, there are some who refuse to adjust themselves to conditions. For instance, I happen to know one large manufacturer who is doing the greatest volume of business in his history and making more money than he ever made. He does not bother about business conditions.

He makes and sells shoes, and has been doing it for thirty-odd years. He began after the panic of 1893, when it took brains to make money. He has the brains. He started with a line of well-made shoes at a fixed price. His shoes were cheap, but they had style and quality—which no other cheap shoes then on the market had. He sold through his own stores—at first in a little shop where he was the whole staff. Then, one by one, he opened other stores and within ten years he was a millionaire.

He kept to his original methods until the war. Then he had to raise prices. He followed his public. Instead of a few staple styles as before, this manufacturer increased his line to twenty-five hundred styles at prices ranging from five up to twenty dollars. He kept his head; he never considered this style orgy as a shoe business; he thought the public was crazy—but, be that as it may, it was up to him to meet its desires. When the depression came he did not spend a minute in mourning; he put his house in order. And he made a thorough job of it.

First he went through his styles and cut out all the freak stuff, with the result that his line went from twenty-five hundred down to about one hundred. Instead of making a number of grades, he fixed on one grade of shoe and he went back to his old plan of a single price. This price was not quite double the pre-war price.

This man had for years been gathering figures on the sizes sold in his stores and on the basis of these figures he worked out his stocks. He still carried every size, but only in proportion to the sales; where another dealer might have ten of an odd size in stock, he would have two.

The Man with a Worried Look

What has happened? The low price more than doubled sales. Most manufacturers could not earn a profit at his price. But he is ready again to cut prices—the cutting down of styles and the fixing on one grade have so simplified factory operations. And the sales at one price have done away in the retail stores with the necessity for showing several grades of shoes; the customer comes in expecting to pay the price shown in the windows. He does not have to decide how much he can afford. Therefore one clerk can now sell as much as two used to sell. The planned stocks have cut out the waste of shoes left over. The whole line is compact, the capital turns frequently, and the man is able to do business on about a third smaller investment than before—which means in this case five million dollars.

This shoe man finds business good. Take another man. He finds business bad—he is going about with a worried look. He manufactures a staple article of clothing. He began back in the early nineteen hundreds when the general upward price swing was on; he looked after his affairs and made money. Most people who began in those years grew rather solidly; prices moved slowly upward—so slowly as not to induce speculation among cautious men, but yet enough to cover up all but extraordinary incompetence.

This man was financially strong enough to weather the depression in 1914-15; then he started to make war money and he made a lot of it. He had his head turned by prosperity. The after-war boom finished him; he decided he was a great man and ought to have a great business. He was building factories for several times his former volume when the boom broke. He had jacked up his prices with the market. The depression found him with a great lot of goods he could not sell and an impressive pile of debts he could not pay. He met the depression with lamentations. He scraped along with his creditors, hoping for better times. Last year he did a little business and he did it so carefully and closely that again he made some money. This year he found orders coming easier and soon he was shouting prosperity and hoping that soon he could raise prices. When orders began to pile up, he opened his whole factory, stopped whining, and said that at last he was himself again. He did exactly what he had done in the previous boom; he raised prices to the extent the traffic would bear, and it seemed the traffic would bear a lot. I met him the other day. "Orders are dropping off," he said nervously. "The first thing you know we shall be in bad times again. And just when I was beginning to get a little cream."

"What are you doing about it?"

"Doing? What is there to do? I am doing nothing. If business gets bad, I'll just have to dig in again."

That man learned nothing from his near-failure in 1921. His whole scheme is to get while the getting is good. And so business will discard him.

Business forecasting has its uses—provided its pronouncements are not taken at face value nor as guides to inaction rather than to action. And also we have to be careful about taking statistics too seriously. When a manufacturer tells me he cannot sell at a profit, I do not sympathize with him. I know perfectly well that he is not conducting his business properly.

The wages and costs in some sections of industry are too high—particularly in building. They will adjust themselves as the drive for building slackens. Perhaps it will be possible to continue the high building wages—they are too high now, not because of the number of dollars the masons, plasters, and carpenters receive. They are high because the work equivalent is not being returned. The taste of high wages is a splendid thing for the men—they will learn how nice it is to have luxuries. Soon they will learn that wages are dependent upon work; and then they will rather work harder and more efficiently than give up their gains. That is the way too high wages usually adjust themselves.

The purchasing of the country is done by the people who work for wages; the money paid out in wages is the big revolving fund. The purchases of the people earning over $5,000 a year are small as compared with the total volume of the country, but they are important in one way. The workingman and his wife are not careful buyers when money is coming in: intermittent incomes do not induce thrift. The usual $5,000 income is steady; money comes in over a sufficiently long period to teach that ends will not meet of themselves—they have to be made to meet. For with something of a position to support, a man cannot simply go into winter quarters when he is hard up; he may spend all that he earns, but he will be careful not to spend more than he earns. And thus he is the first to curtail his purchases when prices soar too high.

At the first pinch of prices the workingman does not cut down; he asks for more money and he keeps on asking until he asks for so much that no one will hire him. Only then does he change his manner of living.

The rich man does not cut down; he does not have to. The comparatively poor man does not cut down; he just stops when his wages stop—he lives on a week-to-week basis. The man in between—the $5,000 man—does cut down, and it is his cutting which takes the edge off business. He is, as I have said, the first to be pinched by high prices and the first to stop buying.

If all men in business looked to the far dollar, we should never have to bother about prices being too high; in most commodities the raw material does not figure so much in the eventual price to the consumer as does labor cost.

The man who asks for only an ordinary return year in and year out, and is constantly improving his processes, earns more in the end than the opportunist looking for an extra profit, and he is able to pay higher real wages, for he can provide steady employment.

The manufacturer or dealer in staples who has been shooting for big profits is already in trouble. In Boston the other day a manufacturer told me he was adding to his hosiery mill; when I returned to my desk I found a note that a big hosiery mill in Philadelphia would liquidate and go out of business. Thus one factory opens and another closes, but only under the most exceptional circumstances does the volume of consumption of staples fall off greatly.

The Limit is not the Sky

There is no need for any manufacturer or dealer in staples to have poor business, provided he does not speculate; for he can always arrange his prices to fit buying power. If he suffers from poor business, it is his fault—not the fault of business. The man who sells to other manufacturers is the one who needs sympathy because the volume of his work depends not on his price and quality, but on how much business those to whom he sells are doing.

One of the many reasons why big business reaching from source to consumer is better than subdivided business is that the whole chain may be controlled by a single policy. For sometimes it is the producer of raw material who is held up by the speculation of the people who use his material, or, again, the assembler of the finished product may find himself at the mercy of manufacturers of essential parts. However, he can usually whip them into shape if he has the nerve. But the in-between man has no one to whip.

I know many such men; usually in depression they are hoping to come across some sure-fire patented article which will give them independence. A maker of metal parts studied carefully the business of his largest customers and then planned savings in their production which would fit in with savings in his production; in this way he helped his customers to reduce prices and kept his own wheels turning. The ingenious man can always find a way to keep going. Some machinery manufacturers who ordinarily have nothing at all to do in bad times kept going in 1922 by planning improvements for the factories which were ordinarily their best customers and then naming prices on their products which could hardly be refused.

There is no reason why business should not be satisfactory for those who will take the trouble to find out how best they may supply their markets. And as for those who will not take the trouble—we are better off without them. Practically everyone whose affairs are not in shape has only himself to blame. For it has been only a few years since even the most stupid earned that there is a limit to prices—and it is not the sky.

Everything to-day is fundamentally sound. Everyone who deserves a living is earning one. We have few fool laws in prospect—fortunately it takes so long to pass a law designed to meet a temporary condition that the condition is over before the law is ready! It would be quite unnatural if each of us did not have something to worry about in particular, but certainly there is no reason to worry in general.

NOVA SCOTIA'S COAL INDUSTRY

Coal production of Nova Scotia this year will reach at least 6,000,000 tons, according to the Hon. E. H. Armstrong, Premier of Nova Scotia and Minister of Mines for the province. As the total production last year was 3,642,196 tons, the increase this year will be more than one and one-half million tons. The collieries are in good condition and preparations are in progress for the opening of new mines.

WHY SOME SALES LETTERS FAIL

(It's not their fault at all)

It was the salesman on the road who put his finger on the sore spot.

It was the same salesman who had made an exceptional record during a very dull season.

The salesman knew why his record was good and most of his customers knew why they held their orders for him and passed up other houses.

In spite of his record, the salesman was worried. Never, during all his career, had he had to take on his shoulders so many mistakes of others.

He had had too much explaining—too much of "Don't bother, Henry! (a good customer) I'll fix it." And now, returning to the home office, he was going to say a few things.

First he went to the sales manager and the advertising manager. "Fellows," he said, "you've no idea how much your publicity and sales letters have helped me and surely as well the others out there in contact with our customers; but the whole castle is being shaken as with an earthquake and I've found where the trouble is. We're being undermined by—

"Oh, I know, Brown and Green are cutting prices," interrupted the sales manager.

"Cutting prices, nothing!" came back from the salesman, "Who is it that's sending out those form collection letters? Who is it that's messing up things in the Order and Adjustment Departments? Have you ever seen these letters we are sending out? Well, it's time we had a conference on correspondence."

"We're treating the trade to honey till they buy and then we begin to fill the comb with nitric acid. In ten years I've never had to carry the buck for the house to to such an extent. "Is isn't the fact that a payment is due next week but is the way they say it," one man down East told me—and he had a good legitimate kick too—because we hadn't cleaned up an error on his second shipment and the goods were three weeks' overdue."

The story is longer and replete with more detail but, when the air had cleared and the frolic was over, several new policies had been adopted and follow-ups to sales letters and orders were made to harmonize to the general tune of "You can't shake with your right hand, while you hit me with your left and still be friends for life."—The Crest. (Howard Smith Paper Mills.)

PULP AND PAPER NEWS

The William E. Coutts Company, Limited, Toronto, greeting cards, etc., has been formed into a limited liability company and has been granted an Ontario charter with power to carry on business as printers and publishers. The authorized capital is $250,000 and the provisional directors are W. E. Coutts, H. G. Popham and Robert R. Richardson.

E. J. Jones, general manager of the Spruce Falls Company, Limited, which is operating a 100-ton sulphite pulp mill at Kapuskasing, Ont., was a recent visitor to Toronto. Mr. Jones reported excellent progress as having been made on the townsite at Kapuskasing through the efforts of the company, the Ontario Government and different individuals. The new community hall is about complete and by the first of the year it is expected to be ready for occupancy. The building is of frame and stucco and is 90 x 70 feet, with a large hall for assemblages, reading and rest rooms, billiards room and a gymnasium. The number of new houses put up is 91 and in addition to these there are 19 other houses which have been moved over to the townsite from other locations. The Kapuskasing Supply Company have put up a new store and the Imperial Bank have built and opened a branch. The Spruce Falls Company is operating to capacity and is turning out one hundred tons of sulphite pulp daily.

A. W. McNaughton, Toronto representative of M. V. Dawson & Co., Limited, manufacturing stationers, Montreal, has returned to Toronto after a business trip to Montreal.

When interviewed in Toronto in regard to the report that he would likely go to Michigan and become the head of the forestry department in the state university at Ann Arbor, Dr. Clifton D. Howe, Dean of the Faculty of Forestry at the University of Toronto said that they would have to hold out a very tempting offer to induce him to leave Toronto. Dr. Howe recently visited the University of Michigan where he was engaged on a revision of the forestry curriculum, a matter that has been hanging fire for the past five years.

A. G. Pounsford, General Manager of the Port Arthur Division of the Provincial Paper Mills, Limited, announced last week at Port Arthur that the plant would shortly double its capacity of the groundwood mill from 20 to 40 tons a day. The contract for the wet machine has been awarded to the Port Arthur Shipbuilding Company for delivery as early as possible. The General Electric Company tender for electrical equipment has been accepted. Arrangements by contract have been made for an additional supply of hydro-electrical energy, amounting to 1,500 horsepower, which will be turned into the new department early in the spring.

The United Paper Mills, Limited, Spadina Avenue, Toronto, has sent out a very attractive Christmas calendar, the art display being a reproduction of Crandell's "Bohemian Girl."

At a meeting in Toronto last week of the creditors of the Whalen Pulp and Paper Company, British Columbia, which recently went into the hands of a receiver, E. M. Mills was appointed receiver and general manager in succession to G. F. Gyles. Mr. Mills is vice-president of the Washington Pulp and Paper Company, and is largely interested in the Zelerback Paper Company of California. He will reside in British Columbia. Mr. Mills was directed by the court to enter into a bond of $40,000. Mr. Douglas, representative of the bondholders, wished a practical man to take charge in the place of Mr. Gyles, who is a chartered accountant. Knox Walkem, for the second debenture holders, consented to the appointment, as did also Joseph Singer, counsel for the Whalen Company. "The situation with regard to the company is very serious", said Mr. Walkem, "and it is only by capable management that the industry will be saved for the province. Mr. Mills is a man of great ability and has organized similar companies. We hope he will be able to get the company on its feet again."

H. L. Willson, of the Willson Stationery Company, Limited, Winnipeg, spent some days in Toronto last week. Mr. Willson, who also controls the Winnipeg Envelope Company and the Pioneer Envelope Company, Vancouver, is visiting a number of the paper mills in Ontario and Quebec.

John Martin, of the John Martin Paper Company, Limited, Winnipeg, is expected in Toronto about the first of the year.

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PULP & PAPER WEEK—MONTREAL JAN. 23-25

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The Buntin Reid Company, Limited, Toronto, are putting a new line of Canadian-made paper on the market at the beginning of the New Year. It is to be known as "Dove White" and will be offered in competition with imitation art paper from Great Britain. The sheet was perfected after lengthy and costly experiments and is designed for catalogue, folder and broadside work.

A complete set of cardboards is being prepared by the Buntin Reid Company, Limited, Toronto, in which Canadian manufacturers of these lines will be prominently represented, together with British and American makes. The samples are enclosed in a green cloth covered box, the entire set being very attractively arranged for the convenience of printers and others using the product.

The Everett Printing and Publishing Company, Limited, head office, Toronto, has been granted Ontario incorporation, with an authorized capital of $40,000. The provisional directors are R. A. Everett, W. H. Jeeves and F. H. Miller. Another Toronto incorporation is that of the Thoroughbred Publishing Company, Limited, with an authorized capital of $20,000. Harry Roher, news dealer, is one of the incorporators.

The A. C. Woodward Printing Company, Limited, Chatham, Ont., has been granted Ontario incorporation, with an authorized capital of $100,000. The provisional directors are: A. C. Woodward, John C. Shephard and J. K. Stewart.

J. A Mathieu, former member of the Ontario Legislature for Rainy River, who was in Toronto last week, confirmed the report from Fort Frances, Ont., that the proposed Backus assessment by-law will not be submitted to the citizens of that town on Jan. 1. "The public in Fort Frances is apparently not going to be in favor of the Backus proposition," said Mr. Mathieu who has been closely in touch with the situation. Judging by the last meeting of the Council, when four members voted against the proposal, and by the sentiment of the public meeting held on Monday night, the scheme is not acceptable to the public. The by-law will not be submitted for the present and will have to be dealt with by the Council elected in January. What their attitude will be remains to be seen."

The absence of snow in Northern Ontario and the continued mild weather has resulted in considerable difficulty being experienced by pulpwood operators getting out their shipments. Settlers, who have wood piled in the bush, have been unable to haul it to the railway stations for shipment until there is a sufficient snowfall for sleighing. One large concern which has contracted for 60,000 to 70,000 cords for delivery during 1924 and should now be sending out 18,000 to 20,000 cords a month is only shipping from 1,500 to 2,000 cords owing to the vagaries of the weather. With the advent of colder days and more snow, shipping conditions in the pulpwood line would be ideal, as the car service is excellent.

FOUGHT DESPERATE FIGHT

Frank J. D. Barnjum passed through Halifax on his return to Annapolis from Kent county, where he took an active part in the federal bye-election. Speaking with The Herald, Mr. Barnjum stated that probably no more desperate attempt was ever made in the political history of Canada to hold a seat, than the efforts put forth by the government forces; and, he added, "the result proves once more that the people still rule; that no campaign, no matter how desperate, can bring support in this day to a government that has so completely lost the confidence of the electorate.

"I have taken part in many elections," Mr. Barnjum said, "but never in my experience have I witnessed such frantic attempts to stay the tide of popular indignation. The county was literally over-run with speakers and campaigners for the government. They were fighting for their lives — and they knew it. They did everything that was humanly possible to stave off defeat. With the fate of the Ministry in the balance, the campaign of the government developed into the next thing to panic. I do not believe that they were surprised at the result: I believe they expected it — that they saw the hand-writing on the wall. The moral effect of the smashing result in Halifax was overwhelming.

"Canadians," Mr. Barnjum thinks, "may take courage from what happened in Kent and Halifax; and again rejoice in the fact that you can't fool all of the people all of the time."—Halifax Herald.

Happiness is not an outside thing which one can buy or beg, borrow or inherit. It is the child of your own heart and brain.

MR. CATHCART'S FINE RECORD

Mr. Joseph M. Cathcart, recently appointed Superintendent of the Interlake Tissue Mills, Merritton, Ontario, brings to his new position a wealth of experience which should prove invaluable in the manufacture of the Interlake's many grades of paper.

Mr. Cathcart was born in Glasgow, Scotland and has been in the paper business twenty-nine years. When six years of age he came to the United States with his family, settling in North Hoosick, N. Y. North Hoosick and Walloonsac are two paper towns very close together, and it is natural that when Mr. Cathcart finished school, the paper industry should interest him. His first experience was with Stevens & Thompson, at Walloonsac, beginning in 1895. It was at this plant that he learned the color business, and before he left in 1907, he was superintendent of the mill.

When he left the Stevens & Thompson plant, in 1907, Mr. Cathcart went with C. S. Garret & Son, of Philadelphia, and changed their plant to manufacture high grade wall paper specialties. After staying with the Garrett concern for six years, Mr. Cathcart went to the Harmon Paper Company, at Brownsville, N. Y., and remodelled their machine for wall paper specialties. This job took a year and then he undertook some special work for the Falls Manufacturing Company at Oconto Falls, Wis., in 1913, remodelling their mill to make wall paper.

In 1913 he went to New York and after having a fling at the brokerage business, left that, to go to Plattsburg, N. Y. rebuilding the plant of the Progressive Pulp and Paper Company to make wall paper. From Plattsburg he went to Windsor Mills, Quebec, as superintendent of the Canada Paper Company. During this time his experience has led him over a wide range of the country but at Windsor Mills he met Mrs. Cathcart, settled down and stayed with the Canada Paper Company for five years. It might here be mentioned that Mr. Cathcart is known in paper circles as an expert color man and his past record is one of which he may be justly proud. While at the Canada Paper Company, during the war the shortage of dyes meant that numerous orders would have to be made with substitutes of odds and ends, none of the colors of the formula previously used being available. During this time the Canada Paper Company never had to turn down an order on account of not being able to make a suitable match.

In the spring of 1919 Mr. Cathcart went to the Crystal Tissue Company at Excello, Ohio, as General Superintendent of their two mills containing four machines to which was added later another machine. Here his natural ability as a color man could be used in full, and he was responsible for the high quality output of sixty or more colors of tissues of various grades, increasing his already enviable reputation as a paper mill executive.

Since coming to the Interlake Tissue Mills he has made alterations on their No. 2 machine, 148 inch wire, to specially equip it to run waxing paper and other specialties, in addition to the present lines of high grade toilet.

NO PAPER STORE IN TASMANIA

A subscriber writes from Launceston, Tasmania, to the "Paper Maker and British Paper Trade Journal," "As one who in days gone by was engaged in the paper trade, I have noted the fact that it is a curious thing that in *all* Tasmania there is not a wholesale paper store. Travellers come from Melbourne now and again but no stocks are here, and there is an opportunity for some live firm desirous of extending their business."

TECHNICAL SECTION

REVIEW OF RECENT LITERATURE

SPECIAL PAPERS AND BOARDS

K-20 Parchment and Imitation Parchment. H. POSTL. **Paper** 32, No. 10 11-12 (June 27, 1923). Brief sketch of the manufacture of vegetable parchment and of its substitutes.-A.P.-C.

K-23 Do You Paste Papers? JAN VAN UITWERKING. **Paper Ind.** 5, 615-618 (July 1923). Discussion of the troubles encountered in sheet and roll pasting with hints on how to overcome them.-A.P.-C.

K-23 Marbling Paper. M. RHEINAUER. Eng. pat. 196,098. In order that the paper to be marked may receive an even coat of preliminary sizing material, the size container has false side and bottom pieces that are kept in motion so as to agitate the size and ensure its distribution over the whole surface of the paper.A.P.-C.

K-23 Paper Backings for Foils. DIAMOND DECORATIVE LEAF CO. Eng. pat. 186,889. Paper to be used as backing for metal foils is coated on both sides with a solution of waterglass, with which castor oil or glycerine may be intermixed. These backings are easily removed after the foils which they protect have been stamped.-A.P.-C.

K-23 Quality Printing Paper. W. GRUNEWALD. **Zellstoff U. Papier 3,** 161-164 (July 1923). A discussion from the standpoint of printing.-J.L.P.

K-18 Manufacture of Millboard from Wattle (Mimosa) Bark. A. T. MASTERMAN. Eng. pat. 196,689, Jan. 27, 1922. Millboard made from wattle (mimosa) bark or similar waste material of tanyards by the process described in Eng. pat. 182,884 but with the assistance of a small quantity of casein, preferably dissolved in alkali, and about 5% of a substance, such as calcium carbonate, which is capable of absorbing oil, is dried at about 80° F. and immersed in hot boiled linseed oil until a sufficient quantity has been absorbed. The impregnated board is then rolled, dried at 80° F., and, if a very hard product is required, baked at 180° F. If a flexible board is required a suitable proportion of creosote, e. g., half a gallon per hundredweight of pulp, is added during the beating operation. The resulting products are suitable for use as wall coverings, panels, floor coverings, etc.-A.P.-C.

K-18 High Test Container Board. CHAUNCEY E. COLE. **Paper Ind.** 5, 773-774 (Aug. 1923). Practical operating hints.-A.P.-C.

K-20 Making Fat-Impervious Papers. Wochblatt. Papierfabr. 54, 1534-2535 (1923); **Paper** 32, No. 13, 7-8 (July 18, 1923). A discussion of the nature of the pulp which should be used, beating conditions, and operation of the paper machine.-A.P.-C.

K-20 Grease-Proofing Paper. W. L. WRIGHT. U. S. pat. 1,449,718, March 27, 1923. A flexible grease-proof coating on paper is formed from dissolved casein, a small amount of ammonia and a vegetable oil, e. g., cocoanut oil, emulsified with water.-A.P.-C.

K-23 Process for the Manufacture of Carbon Paper. A. HAIGH and H. R. HART. Fr. pat. 555,560. Two or more sheets of paper are joined together in such a manner as to be easily separated when required, and the coating composition is applied to the two surfaces of the sheet thus formed.-A.P.-C.

K-23 Safety Paper. B. W. SMITH, assignor to Todd Protectograph Co. U. S. pat. 1,449,453, March 27, 1923. A safety paper for negotiable instruments contains ultramarine and lead carbonate or other salt which will be acted upon the hydrogen sulphide and a small amount carbonate or calcium carbonate and is sized with manganese ferrocyanide solution.-A.P.-C.

K-23 Filter Paper. J. BAKER SONS and PERKINS, LTD., and F. E. THOMAS. Eng pat. 189,562, Sept. 6, 1921. In the manufacture of filter papers capable of retaining very fine precipitates and colloidal matters, decolorizing carbons, such as are sold under the registered trade marks "Norit" and Eponit," and preferably in a very fine state of division, are incorporated with the paper pulp.-A.P.-C.

L-4 Waterproofing Articles of Fibrous Pulp. W. H. DRAKE and J. J. DRAKE. U. S. pat. 1,456,370, May 22, 1923. Waterproof articles such as milk bottles, are formed of fiber coated with aluminum resinate. After the coated fibers are formed into the desired shape in a mold, air or other fluid heated sufficiently to melt the resinate is forced through the material. A.P.-C.

L-5 Fiber, Its Qualities and Use. HAROLD E. SALTON. **Pulp & Paper,** 21, 749-750 (July 26, 1923). Descriptions of the properties and merits of vulcanized fibers.-A.P.-C.

K-23 Protective Paper for Checks. TODD PROTECTOGRAPH CO. Eng pat. 199,806. The paper is printed in various designs with indelible inks. Involved in the designs are words. These are inconspicuous until an attempt has been made to erase written matter, when the wording will be visible, but in a confused way so that the outline cannot be traced. The coloring of the design breaks up at the outline of the wording and causes the confusion.-A.P.-C.

K-23 Vulcanizing Rubber in Paper. F. KAYE. Eng. pat. 191,446. Addition to 167,935. A small quantity of a soluble alkali sulphide is added to rubber latex before the latter is diluted and mixed with paper pulp in the process described in the principal patent. On addition of acid to coagulate the latex sulphur is deposited for the subsequent vulcanization. With acid fibers, or paper sized with resin and alum, the addition of acid may be unnecessary. Sufficient sulphide to produce 1 to 2% of sulphur calculated on the rubber content is usually enough, but quantities to produce up to 10% may be added.-A.P.-C.

K-23 Blotting Paper and Cardboard. H. POSTL. **Paper** 32, No. 20, 5-8 (Sept. 5, 1923). A detailed description of the manufacture of blotting paper, giving pointers on the best operating methods.-A.P.-C.

L-0 Cellulose Wadding. .**Paper** 32, No. 20, 10 (Sept. 5, 1923). Cellulose wadding is prepared from very carefully purified and bleached soda or sulphite pulp on a modified Yankee machine which takes up a thin layer of the moist fleecy material. This is led under hot dryers which cause the moisture to evaporate so rapidly as to produce bubbles of steam between the cellulose and the surface of the rolls, causing a partial rupture of the fabric and cell membrane which increases the absorptive capacity of the tissue. The dried wadding is scraped off the dryer by a doctor which causes a more or less pronounced curling or creping, thus forming a fleecy elastic fabric of very high absorbent power. Six to 24 layers of this tissue are superposed in order to make more tenacious and reduce the porosity of the mass. A.P.-C.

K-23 Paper for Player-Piano Rolls. TH. E. BLASWEILER. **Wochbl. Papierfabr.** 54, 1524-1527 (1923). Tests are recorded on four German papers used for. player piano rolls. The weights of the samples varied from 63 to 66 g. per sq. m.; the thickness, 0.63 to 0.079 mm.; tearing length, 4695 to 5690 m.; per cent stretch, 1.85 to 2.31; and average folding endurance 45 to 136. A good roll paper should have a tearing length in the direction of the roll not under 6,000 m.; and across the roll about 3,000 m.; the stretch should not exceed 1.80% and the average folding endurance not be less than 50. In addition the paper should be free from sand or gritty particles and should show a minimum tendency to change with variation in the moisture and temperature of the air.-J.L.P.

K-19 Vulcanized Fiber. KOLN-ROTTWEIL Ger, pat. 276,384. **Papierfabr.** 21, 359,360 (July 29, 1923). Cotton linters are added in the ordinary process of making vulcanized fiber from paper.J.L.-P.

K-23 Manufacture of Waterproof Drawing and Writing Paper. OTTO LEHMANN. Ger pat. 378,849. **Papierfabr.** 21, 383-384 (Aug. 12, 1923). Powdered stearin is incorporated into the paper by means of hot rolls.-J.L.P.

K-19 Carbon Paper. HEINRICH DANIELS. Ger. pat. 378,851. **Papierfabr.** 21, 384 (Aug. 12, 1923). A carbon paper is made by soaking thin, transparent silk paper with a dye and covering one side with a sheet of ordinary paper.-J.L.P.

K-23 Manufacture of a Waterproof and Cleanable Paper. JOSEF MANDL. Ger pat. 377,559. **Papierfabr.** 21, 359 (July 29, 1923). Paper is treated with gelatin and then passed between rollers to bring about a stretching. After drying it is lacquered.-J.L.P.

K-19 Paraffine Paper. FRITZ MULLER. **Papierfabr.** 21, 330-331 (July 15, 1923). A general article on the paraffining of paper.-J.L.P.

MACHINERY

K-12 Fourdrinier Wire Seam. W. D. T. GREEN and UNITED WIRE Wks. Eng. pat. 195,533, Apr. 5, 1923. One or more wires are secured, by stitching or otherwise, to the under surface of the wire sheet on either or both sides of, or across the seam. The wires are preferably of such a thickness that they project to a plane beyond that of the wire sheet and its seam, and they are so disposed that they present a minimum surface at the point of contact with the suction boxes and rolls. It is essential that only a minimum amount of the wires project to the top surface of the Fourdrinier.-A.P.-C.

K-12 Cleaning Felts. H. JOTSEN. Eng. pat. 189,810. A number of paddle wheels are provided, each arranged in a separate compartment of the cleaning-liquid container. The paddle wheels are placed so as to act on the under or non-operating side, and the cleaning liquid travels through the compartments on the counter-current principle.-A.P.-C.

K-12 The Fourdrinier Machine. HARRY E. WESTON. **Paper Ind.** 4, 1213-1221 (Dec. 1922), 1371-1377 (Jan. 1923), 1515-1519 (Feb. 1923), 1663-1667 (Mar. 1923); 5, 91-95 (Apr. 1923), 315-320 (May 1923), 466-469 (June 1923), 622-625 (July 1923). A very detailed description of the various parts of the Fourdrinier paper machine, their function and operation. A.P.-C.

K-12 Watermarking. G. EBART. Eng. pat. 189,142. Sharply defined watermarks are obtained on the paper machine with papers of high strength by using a web of finer ground pulp as the second layer. The marking on the second layer which joins the coating will be sharp. A different colored web may be used to enhance the sharpness.-A.P.-C.

K-12 How Felts and Jackets are Made. WALTER S. ROONEY. **Paper Ind.** 5, 640-642 (July 1923). Brief description of the manufacture of felts and of jackets. -A.P.-C.

K-12 Method of and Apparatus for Washing Paper Machine Felts. J. T. AYERS. Fr. pat. 553,916. Above the felt are four perforated rolls, one for washing solution and the next for cold water, side by side and at approximately the same level; the third for steam and the fourth for compressed air. The last two are respectively directly over a two compartment suction box which is under the felt and which can be moved vertically. To clean the felt, the suction box is raised in contact with the felt, and as the latter travels it receives the washing solution(only when it is very dirty), the cold water, then steam (which passes right through being drawn into the first compartment of the suction box), and finally compressed air which is drawn through into the second compartment of the suction box.-A.P.-C.

K-12 Device for Cleaning Dandy Rolls or Paper Machine Wires. SOCIETE ANONYME DES PAPIERS ABADIE. Fr. pat. 553,198. A suction box is placed to extend across the whole width of the roll or wire and on the surface which comes in contact with the pulp, so as to remove any particles of the latter which may adhere.-A.P.-C.

K-12 Determination of the Power Consumption of a Ball Bearing Drier Cylinder. **Pulp & Paper** 21, 721-724 (July 19, 1923). Report of a test performed on the dryer cylinders of a 166 inch tissue paper machine designed to run at 700 ft. per min., to make a preliminary estimate of the power consumption. It was determined in three independent ways: (1) by using a motor whose efficiency curve was known, and determining its power consumption; (2) by using a string wrapped around the cylinder and a weight to start the machine; (3) by getting the cylinders up to speed and then letting them coast; the time necessary to stop gives a direct indication of the bearing friction and the power consumption. The power consumption per cylinder was 125, 161.1 and 125.6 watts, respectively, by the three methods, average 136.4 watts. For the 17 driers the total would be 3.1 h.p.; and a conservative estimate of the total power required would be 5 h.p. If the gear drive were entirely eliminated in this case and the dryers were driven through the felts only, there would be a maximum tension in the felt of 200 lb., or a little more than a pound per inch of width.-A.P.-C.

UNITED STATES NOTES

A bill that is intended to provide the foundation of a general American forestry policy has been introduced in the Senate by Senator McNary of Oregon. This measure is the first legislative result of nine months of work by the Senate Select Committee on Reforestation of which Senator McNary is chairman. By the provisions of the bill, the Secretary of Agriculture is directed, in co-operation with state officers and other agencies, to recommend systems of forest fire prevention and suppression for each forest region of the United States, with a view to the protection of forests and water resources; and the continuous production of timber on lands chiefly suitable for that purpose. An appropriation of $2,500,000 is authorized for purposes of preliminary investigation and administrative co-operation with the States. The Federal Government is not to spend more for these purposes in each State than the State itself appropriates, except for investigation. Participation of the States in Federal aid is dependent upon their having systems and practices of fire prevention and suppression that are fairly effective. A special study of the relation of taxation to forest perpetuation and the drafting of favorable local taxation laws is directed. Other sections provide for co-operative work in the distribution of forest-tree seeds and plants to be used in reforestation or afforestation, $100,000 being authorized for that purpose.

Gerhardt Jensson, part owner of three pulp mills in Sweden, who has been in the United States two months studying the pulp and paper situation, sailed for home last week on the Kungsholm of the Swedish-American Line. Mr. Jenssen deplored the lack of reforestation he observed while in America. Reforesting of spruce forests, he said, was woefully neglected, and tracts cut fifty years ago are still denuded. The denuding of the forests, he said, was due primarily to the growing demand for newsprint in the United States.

The International Paper Company is understood to have under way two additional water power developments aggregating about 20,000 horse power. The current will be sold to outside interests and it is expected that the addition will increase the company's income. Work is being done on the feeder dam development in connection with the Finch-Pruyn Company, while preliminary operations have been started at High Falls on the Saranac River.

The Union Bag and Paper Corporation has declared a dividend of 1 1-2 per cent. upon its stock, payable January 15, 1924, to the holders of record of the stock at the close of business on January 5, 1924.

John Lackner, president of Lackner Paper Company, Astoria, L. I., is in serious condition in his home in Flushing, L. I., following an attack on him by bandits last Saturday. Mr. Lackner was returning to his factory from a bank with the company's $1,600 pay-roll, when two armed bandits waylaid him. Mr. Lackner resisted them and was shot in the right arm. He not only kept possession of the money he was carrying, but chased after the highwaymen until he collapsed due to loss of blood. Though the bandits escaped after their attempted hold-up, the police later arrested a man who had a pistol in his possession and who, they claimed, admitted having shot Mr. Lackner.

A. W. Chaffee, Louis Rockwell and Harry Hampstead, are incorporators of the St. Charles Paper Box Company, St. Charles, Ill., which has been formed to manufacture set-up and folding boxes. It is reported that the company will take over the plant formerly occupied by the Robbins Paper Box Company.

It is rumored in the trade that Howard W. Taylor, vice-president and general manager of Dill and Collins, has resigned and that on January 1 he will become president of the W. C. Hamilton and Sons Company which conducts the paper mill at Miquon, formerly Lafayette, on the Schuylkill River just about Manayunk. With the coming of Mr. Taylor, the present head of the company, Samuel L. Hammer, who has been with the company since the retirement of Treas. B. Synder a year ago, will fill the position of treasurer. Changes in the personnel, it is believed, will inaugurate a large development in the Hamilton business.

A. M. Korloff, former captain in the Imperial Russian army, is doing turns at the various hard manual tasks that go with the experience of being a woods worker in the snow covered timber regions of northern Michigan. This is the seventh State in which Capt. Korloff has worked as a lumberjack to obtain information which he expects to take back to Russia in order to teach American forestry methods to his countrymen. Korloff, who is a graduate of the Imperial Forestry School at Petrograd and who received a master's degree from the University of Washington last year, now is working under the auspices of the school of Forestry of Yale University. Born in Siberia thirty-two years ago, Capt. Korloff spent five years in the Russian army, during which time he served against the Germans in the Riga campaign.

A report by the Forester of the United States Department of Agriculture states that fires within the boundaries of the national forests swept 373,214 acres during 1922, and destroyed timber and other property valued at 494,965, exclusive of the intangible and indirect damage to young growth. It is pointed out that this destruction of wooded areas owned by the public, which are carefully watched and protected, is probably greatly exceeded in areas of equal size owned privately. Urgent requests are contained in the report to all who own large acreage to plant trees, and attention to plant trees, and attention is called to the fact that the annual drain on the country's forests amounts to 25,000,000,000 feet, while growth replaced amounts to only 6,000,000,000 feet.

A bulletin of the Forest Service shows that the United States is now using more wood than any other country.

The Forest Products Division of the American Society of Mechanical Engineers, the largest single organization of professional engineers in the country, will urge the adoption by Congress and by the Legislature of the various States of a "definite," constructive program for maintaining the productivity of our forests and forest lands under Government auspices and at public expense." The division, according to an announcement made by Chairman Thomas D. Perry of Grand Rapids, Mich., from the society's national headquarters in New York City, will recommend that this society place its resources at the command of the Federated American Engineering Societies in arousing the interest of the nation's engineers in timber conservation and reforestation "as absolutely necessary to continue our timber supply and perpetuate our water power and inland navigation."

The Markets

PAPER TRADE REVIEW

The business of the pulp and paper industry has been completed for the present year and most of the manufacturers and distributors are busy preparing for stock taking between Christmas and New Years. For the most part it must be said that stocks of consumers and jobbers are low as the year closes, and some lines are particularly so in view of the uncertainty regarding the development of trade during 1924 and the disturbance created in current business by the intricacies and exactions of the new Sales Tax. Taking the year in review it may be stated that as far as the jobbers are concerned business has been a little ahead of last year in respect to volume, while prices are slightly higher on flat papers. During the year the outstanding feature of pulp and paper operations was the spottiness that characterized market conditions almost from the beginning of 1923. The experience of most paper distributors was that while their books showed a good turn-over in certain months of 1922, and while the same was anticipated for the corresponding period in the present year, it did not always materialize, although following months and periods would average up and a fairly satisfactory total volume of business for the year resulted.

Newsprint Mills Busy

The newsprint mills may be said to have been running at capacity all year. They have been exceptionally busy and both the contract and spot demand have kept up well, with prices fairly steady. Despite considerably increased production facilities during the year none of the Canadian mills had any difficulty in disposing of their output and increased production plans for the coming year appear to be justified by the present excellent state of this branch of the paper industry.

Pulp

There was a good demand for sulphite pulp in the earlier months of 1923 but during the past six months there has been a decline in both price and demand. The groundwood market has shown an erratic tendency, and early in the fall, owing to low water and the shutting down of several grinders in consequence, prices jumped as high as $50 and $55 a ton at the mill, or practically double what it had been selling for a few months before. However, with the advent of fall rains there was an easing up in values and prices dropped to about $40, which is the ruling price at the mills today.

Book and Writing Papers

In book and writing papers the situation is such that the total production is much more than the Canadian market can consume and the outlet of surplus stocks depends upon foreign demand. In this connection it is worth mentioning that two of the leading Canadian mills have sent representatives to other countries to get first hand information and details regarding weights, sizes and quantities to meet special calls. None of the book mills have been running at capacity during the year and have been operating on from seventy-five to eighty per cent of their normal output. The one feature which appears to have thoroughly taken root in the trade is that the old practice of placing orders months ahead for deliveries has been thrown into the discard and now, except on contracts made with the publishers, banks and other steady conservative users of book papers and writings, orders are placed only as required and in very mush smaller quantities than previously. This, of course, is not an ideal method of transacting business, but the war and its subsequent effects brought about many changes in business methods and selling arrangements, and the ordering of stocks from hand to mouth is not alone peculiar to the paper trade but has been done in practically all lines of allied and other industry. Whether the old routine will ever be resumed and orders placed months ahead for delivery is, of course, problematical, and will depend largely on the law of supply and demand, foreign trade conditions, price tendencies, facilities of delivery, etc.

Good Year for Some Lines

While some classes of paper have had a rather light year in volume, some lines have come through well, notably tissues, toilets and light weight papers generally. There has been a big output of these lines and on the whole manufacturers are fairly well satisfied with the year's operations. Manufacturing stationers have had quite a good year, although they are quiet at the moment, and the same may be said of envelope manufacturers. Converters of paper generally have done a good business and up until a couple of months ago the paper box industry was thriving and using good quantities of board. The year closed in these lines with a falling off in business. While the latter part of the year saw a recession in prices for kraft and wrapping papers, the year, on the whole, has been a good one for these lines, and while the manufacturing companies have perhaps not made so much money, they have done a fairly satisfactory volume of business.

Outlook Good

While the latter part of the year showed a falling off in business generally in paper lines manufacturers and jobbers alike are looking forward to a comeback early in the new year. They point to the fact that Canadian-made papers are attracting more attention today than ever before and that there is a general tendency on the part of the consuming public to give the home article the preference. This appears to be the policy in the printing and other paper consuming trades and with the Canadian mills turning out paper in most lines that can compete with the best of foreign importations, the coming year should produce a still greater demand for Canadian-made paper lines.

There are souls in this world who have the gift of finding joy everywhere and of leaving it behind them when they go.

Annual meetings of Canadian Pulp and Paper Association - Montreal - Jan. 23, 24, 25.

NEW YORK MARKETS

New York, December 22.—(Special Correspondence)—The holiday spirit is in the air, and, as is usually the case when the Christmas season rolls around, business is being affected in an unfavorable way, that is, business in paper. The market in New York this week has exhibited little activity of importance. There has been a routine demand for paper but consumers in general have limited their buying to cover immediate needs, and there has been a noticeable reluctance to augment stocks with the inventory period here and with nearly everyone endeavoring to keep stocks at as low a level as possible.

Some paper mills are curtailing production to a point where they are closing down for several days next week. This does not mean that the market for paper is any different from that ordinarily ruling at just this time of the year. Repairs to machinery have to be made at around this season, and paper manufacturers usually select the last week of the year in which to effect these repairs and to take inventory. Therefore the situation at manufacturing centres is likely to be quiet for the next few days or until after the holidays are over and the market gets back into its normal swing.

No material changes in paper prices have occurred during the current week. The tendency in some grades is unmistakably downward and slight revisions in an off direction have been made in certain cases, but market levels on the whole are being well maintained. Newsprint is in a strong market position. Supplies are moving into consumption in large tonnage, and mills are working at capacity or close to maximum output. Reports say that the International Paper Company is operating its plants at the peak of production, averaging about 2,000 tons per day. The company reports that there has been some falling off of demand for paper other than newsprint, but that print paper demand shows no signs of abatement.

Newsprint production in the United States in November totalled 119,720 tons, compared with 122,073 tons in October, while shipments from mills amounted to 117,176 tons, against 124,894 tons in October. This means that manufacturers shipped out very nearly all of their production last month, also that output was up close to a record level. Canadian production of 110,839 tons makes a total for the Continent in November of 229,559 tons. Canadian mills shipped 110,786 tons, making an even better showing than United States mills.

The anti-dumping ban against imports of newsprint from Sweden into the United States has been lifted by the Treasury Department, Director Camp of the Customs Service having approved the request of the Collector of Customs at Baltimore for the withdrawal of dumping notices covering newsprint paper from Sweden because of the great difference between the quantities purchased there for home consumption and for exportation to the United States.

Manufacturers of book paper are reported shading prices in some instances. This class of paper producers are undoubtedly in want of additional business. Book paper is moving in good tonnage on contracts but transient demand is developing slowly, and most mills require more orders to warrant production operations closer to capacity than they are now running. Manufacturers consequently are not permitting questions of slightly lower prices to stand in the way of securing orders, and when consumers show willingness to place tonnage business they are generally getting the paper desired at price concessions. Machine finished book paper is quoted on an average at about 6.50 cents per pound f.o.b. New York; down to 6 cents has been mentioned in some quarters, however, though the paper involved in transactions at the latter price has not been of extra good quality. Coated book is quoted at about 8 cents a pound upwards, depending on the grade and quantity.

Wrapping continues to evince a soft price undertone. The stimulation of demand occasioned by preholiday buying of retail merchants is over, and the market at the moment is rather narrow; moreover, competition for business is keen, importers cutting in on domestic producers in a great number of cases and marketing the foreign product in this country. No. 1 domestic kraft wrapping is quoted at about 6 to 6¼ cents per pound f.o.b. New York, while the best grade of imported kraft is reported selling at around 6 cents a pound in New York.

Quotations on box boards are steadier although reports state demand is quiet. Paper box manufacturers are purchasing in a cautious manner and chiefly against immediate requirements, while mills have curtailed their operations, particularly those in the East. Nevertheless plain chip board is quoted at $47.50 a ton f.o.b. New York, which is a little above the price recently prevailing, and news board at $52.50. The probabilities favor buyers getting board at slightly under these figures, however, when tonnage lots are involved.

GROUND WOOD. — Prices of mechanical pulp are steady and everything points to supplies moving into consuming channels in consistent fashion. Probably demand has eased off somewhat during the past few days, but this is attributed to nothing else than the inventory season, and as most grinders are well fixed with contracts and old orders they are not worrying over the slowing down of the market at the moment. The outstanding feature in ground wood would seem to be that producers themselves are using up their product at a heavy rate, that they have been unable to accumulate pulp for some time and that therefore they have far less than normal stocks on hand. There is consequently no pressure to sell, and prices are well maintained. Domestic ground wood is quoted at around $40 a ton f.o.b. producing plants, with quotations varying in accordance with the air dry test and the freight from grinding to consuming mills. Imported ground wood of Scandinavian origin is quoted in New York at $38 a ton ex dock at this port.

CHEMICAL PULP. — There is not much activity of note in chemical wood pulp at present. Demand from paper mills has noticeably subsided in the past several days, reflecting the desire of consumers to keep stocks low for inventories, and the bulk of such business as has been transacted has involved foreign pulp for forward shipment from abroad. The price tone is steadier by far than it was a short while ago. Importers, domestic producers and dealers in common express the opinion that pulp values have at last struck bottom and the belief prevails that the market will show a rebound upward soon after the turn of the year. Consequently there is not as much pressure to sell, and owners of pulp appear more determined to hold out for the prices asked.

Reports have been heard of sales of Swedish kraft pulp at 2.50 cents a pound ex dock New York, while foreign unbleached sulphite is said to have sold also down to this same figure. However, prices of domestic kraft seem firmer. One large producer is said to have announced an advance from 2.50 to 2.65 cents for his No. 1 kraft f.o.b. pulp mill, and a well known Canadian manufacturer is reported securing substantially above this price for No. 1 kraft pulp. Bleached sulphite is reported selling at about 4 cents a pound for No. 1 domestic f.o.b. pulp mills, and at slightly under this level for No. 1 foreign, with No. 2 foreign said to have been bought by paper mills down to 3.50 cents ex dock New York.

RAGS. A distinctly firm tone marks papermaking rags. Regardless of the dull period occasioned by the holidays and inventory-taking, prices of rags tend strongly upward, and additional advances have been recorded this week in some grades. Roofing rags are particularly strong. No. 1 roofing has sold at close to 2 cents a pound, 1.90 cents being the figure definitely mentioned f.o.b. New York, while No. 2 roofing stock has brought 1.50 cents New York. New cuttings are firm and in some instances advancing. Blue overall cuttings are reported held by dealers at 9 cents a pound f.o.b. New York, unbleached muslins at 11.75 cents, washables at 5.50 cents, No. 1 white shirt cuttings at 13 cents or higher, and light silesias at 8.25 cents. Old white rags are hard to locate in sizable quantities and of usual good quality, while thirds and blues are selling in a steady way and stiffening prices, repacked blues bringing 3 cents or more a pound f.o.b. New York and miscellaneous packing 2.50 cents. There have been sales of foreign dark cottons reported to roofing paper mills at 1.65 cents a pound ex dock New York, indicating that these rags are steadily climbing in value.

PAPER STOCK. — Slight declines in several grades constitute about the only changes of importance in old paper in the New York market this week. Old magazines have eased off a trifle to where mills are buying heavy No. 1 flat magazines at 1.50 cents per pound f.o.b. this city, though special quality packing is of course fetching above this price. Old kraft paper has eased also, sales of No. 1 packing at 2.10 cents a pound and probably at a shade less being reported. Folded newspapers are steady at 85 to 90 cents a hundred pounds New York, and No. 1 mixed paper is selling at 60 to 65 cents. Shavngs are quoted at previous prices, with soft white at around 3.15 cents a pound f.o.b. New York showing more firmness than hard white, which are quoted at 3.80 to 4 cents New York, depending on the quality of packing. A particularly strong item is white blank news. Dealers are demanding at least 2.25 cents a pound f.o.b. New York for this paper, and some will not take orders at this basis owing to the high prices ruling in the trade.

OLD ROPE AND BAGGING. — Old rope quotations hold at about last reported levels. No. 1 domestic manila rope is selling at 6.50 cents a pound f.o.b. New York, and No. 1 foreign manila rope at 6 to 6.25 cents ex dock at this port. Perhaps buyers are pick-

HANS LAGERLOEF, President and Treasurer
ORVAR HYLIN, Vice President
MAURICE LONDON, Secretary

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WOOD PULP

SOLE AGENTS IN U. S. A., CANADA, MEXICO AND CUBA FOR

Finnish Cellulose Association
Helsingfors, Finland

AND

Finnish Wood Pulp Union
Helsingfors, Finland

ing up an occasional lot of rope at slightly under these rates. More activity is noted in scrap bagging. Roofing bagging is moving fairly freely at 90 to 95 cents a hundred pounds f.o.b. New York, and dealers tell of receiving 1.25 to 1.40 cents a pound New York for No. 1 scrap burlap packed for tissue and manila paper mills. The fact that roofing bagging is moving well prompts dealers to ship most of their supply of mixed bagging to roofing paper mills rather than sort it, so that available stocks of No. 1 bagging are not up to normal.

AMERICANS IN DEAL WITH VICKERS, LTD.

Interviewed in New York recently following his return from Europe, George E. Learnard, president of the International Combustion Engineering Corporation, said that the negotiations in progress for several months between his company and Vickers, Limited, for the joining of these two interests in the manufacture of power plant equipment have been successfully concluded.

He explained that the company will be immediately registered in England under the name Vickers & International Combustion Engineering, Limited, with an initial capital of £500,000. All of the stock is owned in equal shares by the two companies. It is also pointed out that no new financing is required.

The directors of the new company follow: Sir Trevor Dawson, London, England, deputy chairman and managing director Vickers, Limited, chairman of new company; George R. T. Taylor, managing director Taylor Bros., Limited, Leeds and Manchester, England (a Vickers, Limited, subsidiary), managing director of new company; George E. Learnard, president International Combustion Engineering Corporation, and Wilfrid R. Wood, vice-president International Combustion Engineering Corporation.

Mr. Learnard further said:

"The plant of the new company is situated at Barrow-in-Furness, England, and will commence immediately the manufacture in its own works of boilers especially adapted for the burning of coal in pulverized form, superheaters, economizers, Raymond impact pulverizers, dryers, air heaters and all other auxiliary power plant equipment.

"The company will specialize in the designing, building and equipping of complete power plants, all units of which can be manufactured by the new company and by other companies affiliated with Vickers, Limited, or International Combustion Engineering Corporation."

"A WORD TO THE WISE IS SUFFICIENT"

P[illegible] infection [illegible] injury is treated. Even a scratch may [illegible] poisoning.

Blood poisoning always means intense suffering, sometimes the loss of a limb or even death.

Cases of infection among people who are treated soon after an injury are very rare.

A few minutes at the Hospital may prevent weeks of suffering. Why take a chance?

Industrial Items

SOME HANDY TOOLS

The Canadian Ingersoll-Rand Company, 260 St. James Street, Montreal, has sent us copies of their bulletins No. 8018-e and 8117. He first describes the "Little David" Penumatic Grinders and Saw. This shows the construction of this handy little machine, together with a number of illustrations of its use for a wide variety of purposes. It can be furnished with a wire brush for such purposes as cleaning paint, or with buffing wheels for polishing. Both the grinder and the pneumatic saw are furnished with safety guards.

Bulletin No. 8117 describes pneumatic tool accessories, such as air hose, lamps, etc., and chisels, rivet set, wire brushes, and drills.

These bulletins will be sent on request by the Company. Between $300,000 and $400,000 will be required to construct a new slip and wharves for the Spanish River Pulp and Paper Mills, Ltd., at Sault Ste Marie. The slip will be 200 ft. wide and 600 ft. long, and will run inland to within 100 ft. of the Algoma Central Railway track. The cost of dredging, which will run to about $100,000, will be borne by the Government in consideration of the importance of the industry and of the company's undertaking to ship its product in Canadian bottoms. It is estimated that 250,000 tons of freight, valued at $7,500,000, will be handled annually.

The Port Arthur Shipbuilding Company has been awarded the contract for building the steel towers for the Hydro-Electric power lines between Cameron Falls and Port Arthur, a distance of 80 miles, at a cost of $200,000. The company is also filling a $70,000 order for pulp-mill machinery for the new plant of the Great Lakes Pulp and Paper Company.

STRAW MILLS IN ENGLAND

Information received by British Trade Commissioner Fred Field in Toronto from the head office in London regarding the paper situation in the British Isles is to the effect that there has been no rapid development in the pulp and paper trade in Great Britain during the past month or so, due, it is stated, to the holiday season. One satisfactory point has been noted, however, and that is that there have been fewer serious complaints than is usual at this time of year from the paper mills. The prices of raw material, mechanical and chemical wood pulp, and esparto grass have fallen slightly. The report states that Charles Walmsley & Co., Limited, the well-known paper making machine manufacturers, have at present orders on hand for more than fifteen, practically all for the United Kingdom and Canada. It is stated that the firm has [illegible] paper making machines of their manufacture running in Canada, one of the best of which has an output of over 50 short tons of paper per day, which is thought to be a world's record.

His Majesty's Trade Commissioner in Toronto has been advised that a subsidiary company of W. V. Bowater & Sons, Ltd., has been formed in England with a view to making paper at a new mill which is being erected at Northfleet. Two Walmsley machines, 221 inches wide, are being built and it is hoped to have the mill working in about eighteen months' time. Two new companies, under the name of the Northfleet

Esparto Plant, Ltd., and the Devans Process, Ltd., have been formed for the manufacture of paper. The process which the latter company controls is being used in making the paper which the Northfleet Esparto Plant, Ltd., propose to produce, and it is understood that a number of experiments are to be made at the mill with esparto straw and other fibres.

CANADIAN EXPORTS IN NOVEMBER IN NOVEMBER

The report issued by the Canadian Pulp and Paper Association states that the total exports of pulp and paper from Canada in November were valued at $12,197,577. This was slightly below the value for October exports but was an increase of $771,579 over November 1922.

Exports of paper in November were valued at $8,373,679 and exports of pulp at $3,823,898.

Details for the various grades are as follows:

	November 1923		November 1922	
	cwts	Value	cwts	Value
PAPER:				
Newsprint	2,063,900	$7,684,709	1,890,633	$6,733,078
Book Paper	3,263	25,535	2,399	16,778
Writing Paper	1,838	19,392	[illegible]	12,901
Other Paper) & Mnfrs.)		644,043		468,029
		$8,373,679		$7,230,786
PULP:				
Mechanical	671,196	$1,206,940	659,215	$ 997,007
Sulphite Bl.	269,095	1,091,222	253,713	1,074,864
Sulphite Unbld.	275,748	765,240	527,962	1,205,781
Sulphate	244,010	760,496	290,911	917,560
	1,460,049	$3,823,898	1,731,801	$4,195,212

Pulpwood exports in November amounted to 68,943 cords valued at $739,943 which was a considerable decline from the previous month when the quantity exported was 102,138 cords valued at $1,078,707.

For the twelve months ending November 30th., 1923 there was an appreciable gain in the value of pulp and paper exports over the twelve months ending November 1922. Exports of paper in this period were valued at $92,589,172 compared with $74,319,656, an increase of $18,269,516 and pulp exports at $46,790,411 compared with $41,630,201 an increase of $5,160,210 giving a total increase in value of $23,429,726.

Following are details of exports for the twelve months ending November 30th, 1922 and 1923:

	1922		1923	
	cwts	Value	cwts	Value
PULP:				
Mechanical	6,443,012	$9.524,488	6,937,791	$11,707,962
Sulphite Bld.	2,989,475	12,158,761	3,140,646	13,506,350
Sulphite Unbld.	4,239,891	10.749,893	4,498,153	12,165,135
Sulphate	2,984,587	9,197,059	2,897,127	9,410,964
	16,656,965	$41,630,201	17,473,717	$46,790,411
PAPER:				
Newsprint	18,933,376	$67,943,074	22,572,880	$84,595,637
Book Paper	31,352	227,391	47,642	350,529
Bond & Writing	2,773	138,469	23,237	240,391
Wrapping	359,403	2,733,521	407,193	3,046,989
Other Paper) & Mnfrs.)		3,277,201		4,355,926
		$74,319,656		$92,589,172

The exports of pulpwood in the twelve months ending November 1923 amounted to 1,416,558 cords valued at $13,746,475 which was an increase of 45 per cent. over those for the corresponding period ending November 1922 when the quantity exported amounted to 971,976 cords valued at $10,003, 526.

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EOSINE COLORS
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DO YOU KNOW that the surest and safest investment you could make is to put money into increased earning capacity?

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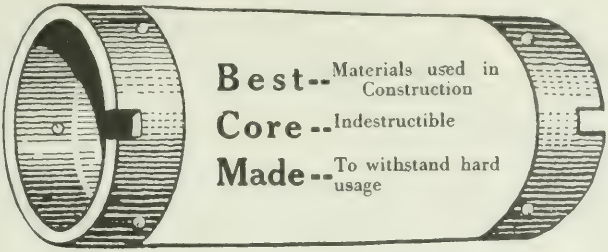
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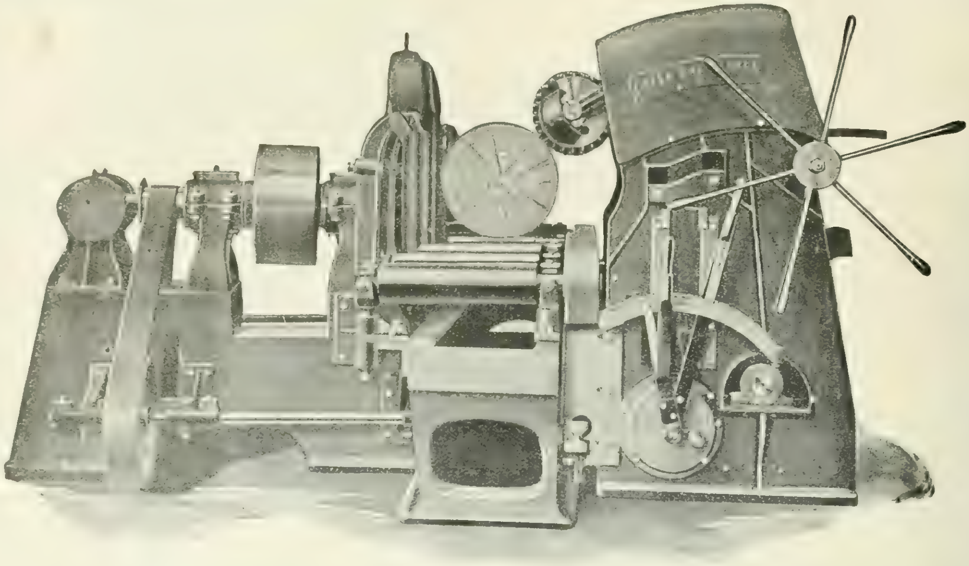

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Alberene Stone Co.
Beveridge Supply Co., Ltd.

Gages — Draft:
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Gages — Differential:
Bailey Meter Co., Ltd.

Gasket — Felt, Paper Etc.:
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Diamond State Fibre Co. of Can., Ltd.

Gaskets-Rubber:
Voorhees Rubber Mfg. Co. of Canada, Limited.

Gasoline Engines:
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Goold, Shapley & Muir Co., Ltd.
Ontario Wind Engine & Pump Co., Ltd.

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McAvity, T. & Son.

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Chas. Walmsley & Co., Ltd.
Dominion Engineering Works, Ltd.
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Hydraulic Machinery Co., Ltd.
Northern Foundry & Machine Co., Ltd.
Port Arthur Shipbuilding Co., Ltd.
Waterous Engine Works, Co., Ltd.

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Waterous Engine Works Co., Ltd.

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Port Arthur Shipbuilding Co., Ltd.
Waterous Engine Works Co., Ltd.

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Hamilton, William Co., Ltd.
Northern Foundry & Machine Co., Ltd
Port Arthur Shipbuilding Co., Ltd.
Waterous Engine Works, Co., Ltd.

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Hendrick Manufacturing Co.

Gravity Recorders:
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Canadian Fairbanks-Morse Co., Ltd.
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Lombard & Co.
Miramichi Quarry Co.
Smallwood Stone Co.
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Eng. & Machine Works of Can. Ltd.
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Port Arthur Shipbuilding Co., Ltd.
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Walmsley, Charles & Co., (Can.), Ltd.

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Dodge Manufacturing Co.
Goldie & McCulloch Co., Ltd.
Hydraulic Machinery Co., Ltd.
Northern Foundry & Machine Co.
Waterous Engine Works Co., Ltd.

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Heating and Ventilating:
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Hamilton, William Co., Ltd.
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Taylor, Ltd., H. S.

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Gutta Percha & Rubber Co., Ltd.

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Hydraulic Machinery Co., Ltd.
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Walmsley, Charles & Co., (Can.), Ltd.

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Canadian Fairbanks-Morse Co., Ltd.
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Knives:
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Can. Des Moines Steel Co., Ltd.
Canadian Fairbanks-Morse Co., Ltd.
Hamblet Machine Co.
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Pulp & Paper Mill Accessories, Ltd.
Simonds Canada Saw Co., Ltd.
Waterous Engine Works Co., Ltd.

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Hamblet Machine Co.
Peter Hay Knife Co., Ltd.
Pulp & Paper Mill Accessories, Ltd.
Reid, C. De Wolf.
Simonds Canada Saw Co., Ltd.

Kollergangs:
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Boving Hydraulic & Engineering Co.
Ltd.

Lamps — Electric:
Canadian Fairbanks-Morse Co., Ltd.
Harland Engineering Co., Ltd.
Northern Electric Co., Ltd.

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McAvity, T. and Son.
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Montreal Locomotive Works, Ltd.

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Meters— Flow:
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Can. Vegetable Parchment Co., Ltd.
Diamond State Fibre Co., of Can., Ltd.
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American Woodpulp Corp.
Brompton Pulp & Paper Co., Ltd.
Donnacona Paper Co.
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M. Gottesman & Co., Ltd.
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Lagerloef Trading Co., Inc.
Price Bros. & Co., Ltd.
Relph, Darwen & Pearce
St. Maurice Paper Co.
Spanish River Pulp & Paper Mills.

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Beveridge Supply Co., Ltd.
Brompton Pulp & Paper Co., Ltd.
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Wayagamack Pulp & Paper Co., Ltd.

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Can. Vegetable Parchment Co., Ltd.
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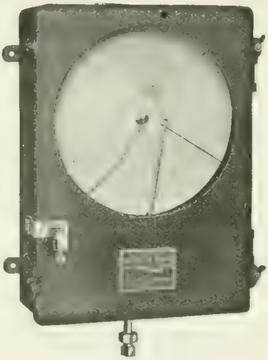

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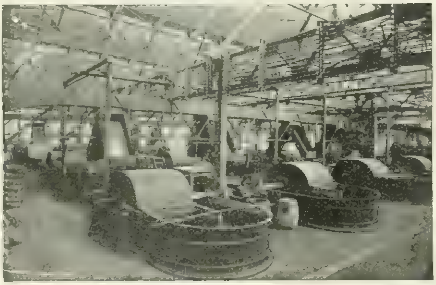

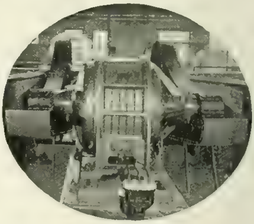

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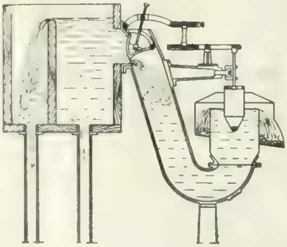

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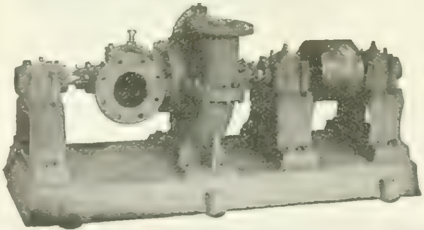

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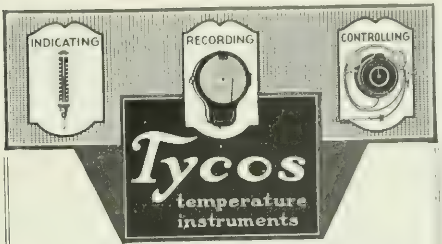

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